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SURFACE COMBATANT PLANNING SINCE THE END OF THE COLD WAR

by

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December 1998

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U.S. Navy surface combatant requirements progressively dropped from 238 in 1988 to 116 in 1998. This reduction was part of the U.S. military transformation in the post-Cold War period. This thesis examined the major factors that influenced the change in surface combatant planning since 1990, i.e., budget agreements, naval doctrine, OPNAV reorganization, and Defense reviews. Data sources included books, periodicals, major force structure reviews, naval strategy papers, budgetary reports, and interviews. The major conclusion is that constrained fiscal resources had the most dramatic effect on the surface combatant fleet. To adapt to the drop in O&M and procurement funding, the Navy has reduced costs by decommissioning older ships, slowing shipbuilding rates, shifting to multiyear contracts, and focusing on life cycle expenses. The next scheduled surface combatant program, DD-21, will compete against other shipbuilding programs due to projections of relatively flat Defense budgets. The shift to littoral warfare has also shaped the surface combatant force, changing doctrine and weapon system emphasis.

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SURFACE COMBATANT PLANNING SINCE THE END OF THE COLD WAR

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ABSTRACT

U.S. Navy surface combatant requirements progressively dropped from 238 in 1988 to 116 in 1998. This reduction was part of the U.S. military transformation in the post-Cold War period. This thesis examined the major factors that influenced the change in surface combatant planning since 1990, i.e., budget agreements, naval doctrine, OPNAV reorganization, and Defense reviews. Data sources included books, periodicals, major force structure reviews, naval strategy papers, budgetary reports, and interviews. The major conclusion is that constrained fiscal resources had the most dramatic effect on the surface combatant fleet. To adapt to the drop in O&M and procurement funding, the Navy has reduced costs by decommissioning older ships, slowing shipbuilding rates, shifting to multiyear contracts, and focusing on life cycle expenses. The next scheduled surface combatant program, DD-21, will compete against other shipbuilding programs due to projections of relatively flat Defense budgets. The shift to littoral warfare has also shaped the surface combatant force, changing doctrine and weapon system emphasis.

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I. INTRODUCTION

A. BACKGROUND

The Reagan Administration had a goal of a 600 ship Navy to fight the Cold War against a known enemy, the Soviet Union. The 600 ship Navy was to contain 238 surface combatants [Ref. 1, p. 31], composed of cruisers, destroyers and frigates. In the event of a conflict with the Soviets, the surface combatants were to defend carrier and amphibious battle groups against Soviet aircraft, missiles and nuclear submarines.

Since the end of the Cold War, naval forces have been reduced significantly. For surface combatants, the Navy's planned force level has fallen from the fiscal year 1988 high of 238 to 116 in fiscal year 1998 [Ref. 2, p. 29]. This is due to the changes in the international security environment and U.S. efforts to bring deficit spending under control.

When the Warsaw Pact dissolved and the Soviet Union broke up, the world changed. In 1990, President Bush acknowledged the "New World Order" and announced that U.S. Defense policy would shift towards major regional conflicts

[Ref. 1, p. 31]. The U.S. military responded to the challenge of fighting major regional conflicts by emphasizing joint warfare doctrine. This doctrine is to integrate all of the services into warfighting strategies [Ref. 3].

For surface combatants, the shift in policy has meant a whole new maritime strategy. Open ocean warfare became a mission of the past. Surface combatants were to be assigned a new mission to participate in major regional conflicts. The new mission was littoral warfare, described in the Navy's white paper "...From the Sea" in 1992 [Ref. 4]. Surface combatants would be responsible for securing the littoral area in a major regional conflict. The joint requirements of littoral warfare have shaped surface combatant force level planning, weapon systems and future ship programs.

On January 1, 1993, the Chief of Naval Operations, Admiral F. B. Kelso, reorganized the Navy's administrative staff (OPNAV) to promote jointness within the naval warfare communities. The Assistant Chiefs of Naval Operations for Submarine Warfare (OP-02), Surface Warfare (OP-03) and Air Warfare (OP-05), the Deputy Chief of Staff for Naval Warfare (OP-07) and the Deputy Chief of Staff for Navy

Program Planning (OP-08) were merged into one staff under the Deputy Chief of Naval Operations for Resources, Warfare Requirements and Assessments (N8) [Ref. 5, p. 2]. The warfare communities no longer reported directly to the Vice Chief of Naval Operations (VCNO), but instead to N8 who then reported to the VCNO. Warfare communities were now required to justify their programs to N8 in terms of their contributions to certain mission areas. The reorganization was a major change for surface combatant planning.

Due to the shift in strategies, weapon systems and future ship programs have been designed with littoral warfare and joint operations in mind. The Navy has been actively pursuing littoral warfare improvements in theater ballistic missile Defense, Tomahawk strike capabilities, naval surface fire support and mine warfare countermeasures. The only new surface combatant planned for the next century is DD-21, the land attack destroyer. One of this destroyer's proposed capabilities is to stop a land force's advancement by itself [Ref. 6, p. 2]. Prior to the 1990s, surface combatants were never expected to exercise this kind of influence on the littoral battlespace.

Since the end of the Cold War, another change has affected surface combatant planning. The federal government shifted its budgetary tactics for deficit reduction. To reduce the federal budget deficit, President Bush and Congress abandoned the Gramm-Rudman-Hollings deficit controls and passed the Omnibus Reconciliation Act (OBRA) of 1990. OBRA 1990 promised to save $482 billion in spending over the next five years [Ref. 7, p. 13]. The savings were due in part to limits on discretionary spending authority and outlays. For fiscal years 1991-93, each discretionary spending category, Defense, domestic and international, had its own spending limit and the overall discretionary budget had a total limit. In fiscal years 1994-95, the discretionary budgets were given just one overall spending limit.

In 1993, President Clinton and Congress passed another reconciliation act extending the discretionary spending limits until 1998. OBRA 1993 promised to save an additional $433 billion from fiscal years 1994 to 1998 [Ref. 7, p. 15]. With the goal of balancing the budget by fiscal year 2002, President Clinton and Congress passed the Balanced Budget Act of 1997. This agreement extended the discretionary spending limits through fiscal years 1998 to

2002 and promised to save $204 billion during that period [Ref. 8, p. 1118].

The majority of discretionary savings came from limits on Defense spending [Ref. 9, Table 8-2]. The spending limits of the BEA continued a negative real growth trend for Defense that began in 1985 [Ref. 10, p. 35]. These budget agreements translated into a real (inflation adjusted) decline of 30 percent for the Department of Defense (DoD) total obligational authority (TOA) between 1989 and 1998. Over the same period, procurement dropped 47 percent, operations and maintenance 15 percent, and research and development 21 percent [Ref. 11, Table 6-1].

The Navy recognized that resources would be reduced and began shrinking the fleet at the end of the Cold War. The surface warfare community decommissioned all of its old steam cruisers, destroyers and frigates. In need of more savings from the fleet, modernization programs were reevaluated and modified. The originally planned procurement rate for Arleigh Burke-class destroyers was five to six per year [Ref. 12, p. 11]. In 1996, only two were purchased [Ref. 1, p. 44] and the planned rate for fiscal years 1999-2003 dropped to three per year [Ref. 13]. The Arsenal Ship, the newest and most revolutionary ship

design since the ballistic missile submarine, was cancelled due to budget constraints in late 1997 [Ref. 14, p. 2].

These two major changes, the end of the Cold War and tight limits on discretionary spending, have shaped surface combatant planning during the 1990s. The DoD has reflected these changes in the "Base Force" (1990), "Bottom-Up Review" (1993) and "Quadrennial Defense Review" (1997). These documents explain the changes in U.S. strategy and the subsequent reduction of military forces to meet the new requirements.

For surface combatants, this has meant a shift in warfare missions and a reduction in force levels. Throughout this decade of transition, the surface warfare community has decommissioned large numbers of ships, evaluated modernization plans for old ships, reviewed force efficiency strategies, reduced procurement rates and changed designs for future ships to meet changing DoD force structures and policies.

B. OBJECTIVE

The objective of this thesis is to promote a better understanding of the post-Cold War period and the change in surface combatant planning. This has been accomplished by

examining the major strategic and budgetary influences on surface combatants.

C. RESEARCH QUESTIONS

1. Primary Research Question

What are the most important factors determining the force level for U.S. Navy surface combatants since the end of the Cold War?

2. Secondary Research Questions

a. What trends are observed in surface combatant force levels since the end of the Cold War?

b. How have the major deficit reduction agreements of the 1990s affected the surface combatant modernization budget?

c. How have the Department of Defense "Base Force" (1990), "Bottom-Up Review" (1993) and the "Quadrennial Defense Review" (1997) shaped the surface combatant force?

d. How did the OPNAV staff reorganization in 1993 change budgeting for surface combatants?

e. How has Navy doctrine, i.e., the shift from open ocean warfare to littoral warfare, changed surface combatant planning?

D. SCOPE

The scope of the research is limited to the examination of the surface combatant force level changes. The research focuses on the budgeted surface combatant force levels and the major factors that determined the numbers. The period studied is from 1990 through 1998.

E. METHODOLOGY

Budgetary reports, documents on strategy and doctrine, periodicals and studies were reviewed and analyzed for information on surface combatant force levels. Interviews with OPNAV personnel were conducted to obtain additional information on the OPNAV reorganization, program planning, and surface combatants. These interviews were with Vice Admiral Philip Quast (Ret.), former Director of Surface Warfare Division (N86), Commander J.D. Moore, Program and

Budgeting Branch (N860) and Captain Linda Hutton, Executive Assistant for Assessment Division (N81).

F. ORGANIZATION

Chapter II explains the federal budget deficit and the impact of budget agreements in the 1990s on Defense spending and, in turn, funding for surface combatants.

Chapter III reviews the post-Cold War change in naval doctrine. The first part of the chapter focuses on the major strategy papers that demonstrated the shift in emphasis from planning war at sea toward supporting joint operations on land from the sea. To illustrate naval strategy before the transition, "The Maritime Strategy" (1986) is explained, including the Soviet threat it was to counter in the 1980s. Then "The Way Ahead" (1991) is examined to discuss the doctrinal transition due to the collapse of the Warsaw Pact. Finally, "...From the Sea" (1992) and "Forward...From the Sea" (1994) are reviewed to show the direction of present naval strategy. The second part focuses on the direction of surface combatants due to the new naval strategy.

The surface combatant community itself has experienced changes during the 1990s that have affected force planning.

Chapter IV explains the 1993 administrative staff reorganization of the CNO and the subsequent change to the programming process. The effect of these changes is then examined in relation to the first budget after the reorganization, fiscal year 1994, and surface combatant planning. In addition, the development of a new assessment process in 1998, Integrated Warfare Architectures, is explained, including the implications for surface combatants.

Chapter V explains the three major DoD reviews in the 1990s; "Base Force" (1990), "Bottom-Up Review" (1993), and "Quadrennial Defense Review" (1997). The reviews explain DoD's attempt to match Defense policy and surface combatant resources. The National Defense Panel, an independent, non-partisan group, critiqued the "Quadrennial Defense Review" (QDR). Their report and the fiscal year 1999 Defense budget, the latest budget since the QDR, are also explained in this chapter. Finally, the effects of these reviews on the entire fleet and surface combatants are discussed.

The final chapter summarizes the major changes that have influenced surface combatant planning. This summary divides the conclusions into factors that shaped the

present force and factors that will influence the future force. The chapter concludes with recommendations for further research.

G. BENEFITS OF STUDY

This thesis examines surface combatant force levels in the 1990s and the factors that changed them. The thesis promotes a better understanding of the new maritime strategy, the budgetary process and the present surface combatant force level.

II. THE DEFICIT AND THE DEFENSE BUDGET

A. INTRODUCTION

This chapter explains the federal budget deficit and the impact of budget agreements in the 1990s on Defense spending and, in turn, surface combatants. Although the demise of the Soviet threat, not the budget, changed naval strategy, this chapter's focus is the fiscal restrictions that played a vital role in shaping force structure. The first part of the chapter gives a historical overview of the deficit, the Gramm-Rudman-Hollings (GRH) deficit reduction acts, the Budget Enforcement Acts (BEA) of 1990 and 1993, and the Bipartisan Budget Agreement of 1997. The emphasis is on the reduction of Defense spending due to the budget limits imposed by Congress and the President. The second part of the chapter explains the impact of those agreements on the Navy budget and surface combatant force planning.

B. DEFICIT

Since 1946, federal expenditures have exceeded revenues 43 out of 52 years, and every year beginning in 1970 (until 1998). These deficits were a result of

numerous events, including the growth of entitlement spending, tax policies, Cold War military expenditures and unexpected economic slowdowns. From the end of World War II through the mid-1970s, policy makers did not consider the budget deficits a major concern. From 1947 to 1974, the federal government's deficits averaged less than one percent of GDP. [Ref. 7, p. 4]

Starting in the mid-1970s, deficits began to increase sharply. From 1975 to 1985, deficits averaged 3.6 percent of GDP and the gross federal debt more than tripled. As a percentage of GDP, the debt was closing in on World War II proportions. [Ref. 9, Tables 1.3 and 7.1]

C. GRAMM-RUDMANN-HOLLINGS

By the 1980s, deficits had become symbols of government failure. The existing budget process, established by the Congressional Budget Impoundment and Control Act of 1974, proved incapable of forcing Congress and the president to effectively reduce the deficit [Ref. 7, p. 12]. In 1985, Congress passed the Balanced Budget and Emergency Deficit Control Act to combat the deficit problem. The Act is better known as Gramm-Rudman-Hollings, after the names of its three original sponsors, Senators

Phil Gramm (R-TX), Warren Rudman (R-NH), and Ernest Hollings (D-SC) [Ref. 15, p. 22].

Gramm-Rudman-Hollings (GRH I) established fixed deficit targets for six years. Each year the targets were reduced until the budget was to be balanced in the sixth year. The GRH I deficit targets are in Table 2.1.

If the Office of Management and Budget (OMB) estimates indicated that Congress was going to exceed the GRH deficit targets by more than $10 billion, a sequester was required. Sequestration cut eligible federal spending by whatever amount was needed to reach the maximum deficit target amount, if the President and Congress were unable or unwilling to do so on their own [Ref. 15, p. 23]. Half of the amount was to come from Defense spending and the other half from eligible non-defense spending.

With deficit estimates significantly above the GRH maximum deficit targets and sequestration looming in 1987, Congress revised the deficit targets in the Balanced Budget and Emergency Deficit Control Reaffirmation Act. The 1987 Reaffirmation Act is commonly known as GRH II and its targets are also listed in Table 2.1.

Table 2.1: GRH I and II Deficit Targets for FY86-92 (In Billions of Dollars). From Ref. 15.

	1986	1987	1988	1989	1990	1991	1992
GRH I	172	144	108	72	36	0	
GRH II			144	136	100	64	28

In 1990, the ineffectiveness of GRH I and II deficit targets reached a peak with President Bush's fiscal 1991 budget. In January, the budget projected a fiscal 1991 baseline deficit of $101 billion, exceeding the GRH II 1991 target by $37 billion. By October, the projected deficit had risen to $295 billion, exceeding the target by $231 billion. [Ref. 15, p. 26] Sequestration would require an unrealistic 34.5 percent cut in Defense spending and a 31.6 percent cut in non-defense spending [Ref. 7, p. 13].

GRH I and II procedures failed to meet their objective of balancing the budget. Their sanctions were too extreme and lacked credibility. Sequestration was unfair in targeting discretionary spending to balance the budget. From 1985 to 1990, Defense spending dropped seven percent in real growth while mandatory spending grew 16 percent [Ref. 9, Table 8-2]. The GRH procedures were a short-term solution for a long-term problem. [Ref. 7, p. 13]

D. BUDGET AGREEMENTS OF THE 1990s

With catastrophic cuts in discretionary spending required under GRH, President Bush and Congress modified their deficit reduction approach with the Omnibus Reconciliation Act (OBRA) of 1990. Under the new Budget Enforcement Act (BEA) procedures, reducing the deficit was no longer the major goal; limiting spending and guaranteeing the baseline level of revenues were the budget process' primary goal [Ref. 15, p.23].

OBRA 1990 promised to save $482 billion in spending over five years. The savings were due in part to limits on discretionary spending authority and outlays. For fiscal years 1991-93, each discretionary expenditure category -- Defense, domestic and international-- had its own spending limit and the overall discretionary budget had a total limit. The disaggegation of discretionary spending into three categories was accompanied by so-called "firewalls." This ensured that any spending below the caps in one area could not be applied to offset increased spending in another [Ref. 16, p. 42]. If spending for any category exceeded its limit, sequestration would be confined to the offending account [Ref. 10, p. 29]. In fiscal years 1994-

95, discretionary spending was given just one overall spending limit. Table 2.2 displays the Defense and total discretionary spending limits enacted by BEA 1990.

Table 2.2: BEA of 1990 National Defense and Total Discretionary Spending Limits FY91-95 (In Billions of Dollars). Ref. 17.

	1991	1992	1993	1994	1995
Defense					
Budget Authority	332.9	305.3	289.7		
Outlays	330.8	310.3	298.9		
Total Discretionary					
Budget Authority	537.1	536.7	535.3	525.2	519.5
Outlays	551.6	545.6	550.2	547.6	547.1

The spending limits were set at levels below the conventional baseline for discretionary spending, i.e., the previous year's level plus inflation [Ref. 18, p. 67]. These spending limits were adjusted each year with the new budget submission to take into account changes in the economy and in technical concepts and definitions affecting the budget [Ref. 16, p. 41].

To Congress and President Bush's surprise, the enactment of the largest deficit reduction package was followed by the largest nominal deficits in 1991, 1992 and 1993 [Ref. 7, p. 14]. In 1993, the newly elected President Clinton and 103rd Congress passed the Omnibus Budget

Reconciliation Act of 1993 (OBRA 1993). This act extended the overall discretionary spending limits until 1998 and promised to save an additional $433 billion over five years. Table 2.3 contains the total discretionary spending limits enacted by OBRA 1993.

OBRA 1990 and 1993 did not include actions requiring a balanced budget. However, with passage of the Bipartisan Budget Agreement of 1997, President Clinton and Congress hoped to achieve balance by 2002. The new agreement extended discretionary limits on Defense and non-defense and created a new discretionary spending cap for violent crime spending in fiscal years 1998 and 1999. For fiscal year 2000, there are limits on discretionary and violent crime spending. For fiscal years 2001-2, only a single cap on overall discretionary spending remains. [Ref. 19, p. 263] The agreement projected a balanced budget by fiscal year 2002. The agreement's limits for Defense and total discretionary spending are displayed in Table 3.

Table 2.3: BEA of 1993 and Bipartisan Budget Agreement of 1997 Defense and Total Discretionary Spending Limits FY94-02 (Billions of Dollars). Ref 19.

	1994	1995	1996	1997	1998	1999	2000	2001	2002
Defense									
Budget Authority					268.6	271.6	275.5	282	289.8
Outlays					267	266.6	269	270.6	273.2
Total Discretionary									
Budget Authority	525.1	511	526.7	539.7	528	561.1	565.9	571.3	581
Outlays	547.6	548.6	552.7	553.7	557.6	560.9	564.7	564.1	560.3

Driven by the need to reduce spending in the name of deficit reduction, and given the opportunity to cut Defense spending after the Cold War, Congress and the President have used the spending caps to reduce discretionary outlays by 13 percent after inflation between 1989 and 1998. As a percentage of federal outlays, discretionary spending was reduced from 42.4 percent to 33 percent of the budget. As a percentage of GDP, discretionary spending fell 2.5 percent. However, within the reductions of the discretionary spending category, domestic outlays actually rose 18 percent, while Defense dropped 32 percent after inflation. [Ref. 9, Tables 8-2 and 8-4]

E. THE DEFENSE BUDGET

At the height of the Reagan military build-up in 1985, Defense TOA was $403.3 billion (FY99 dollars). The 1998 TOA was $262.3 billion (FY99 dollars), a 35 percent drop from 1985. For fiscal years 1992-94, the Defense budget lost on average of nine percent of its spending authority per year. [Ref. 11, Table 6-1] Due to the end of the Cold War, legislators looked for a "peace dividend" and Defense budgets sustained the majority of the cuts in discretionary spending intended to reduce the deficit [Ref. 20, p. 184].

Measured as a share of total government spending, Defense spending had been on a downward trend since the middle of the century. The Defense share of the budget soared to almost 90 percent during WWII. Except for the Korean War, the Defense share had been on a steady decline. The Vietnam War and Reagan Defense build-up slowed, but did not alter the reshaping of federal budget policy away from Defense toward non-defense purposes. [Ref. 21, p.7]

The dissolution of the Warsaw Pact in 1989 and the breakup of the Soviet Union in 1991 undercut the centrality the Defense budget had enjoyed under the Reagan Administration. The end of the Cold War marked the growing

consensus that Defense policy should be subordinated to deficit control. [Ref. 21, p. 12]

The post-Cold War trend in Defense spending began in 1990, when President Bush announced the Base Force. The Base Force's 25 percent active force level reduction was to save $175 billion in budget authority from fiscal years 1992-96 [Ref. 21, p. 15]. With the creation of the Russian Commonwealth, Congress and the President sought further budgetary savings and appropriated below the agreed upon Defense discretionary limits [Ref. 18, p. 67]. In 1993, the new Clinton Administration accelerated the downward trend in Defense spending in the hope of expanding the "peace dividend" [Ref. 21, p. 16].

The "peace dividend" of the post-Cold War period was transformed into Defense spending limits to reduce the budget deficit. During the first three years of the separate spending limits, all deficit reduction from discretionary spending cuts came from the Defense budget. Defense spending accounted for $19.5 billion, or 82 percent, of a total of $23.8 billion in discretionary savings beyond what was required by the BEA caps. [Ref. 18, p. 67]

From 1989 to 1998, these budgetary limits dropped Defense spending from 26.6 percent to 15.9 percent of federal outlays. As a percentage of GDP, Defense outlays declined from 5.7 percent to 3.2 percent. [Ref. 9, Tables 8-3 and 8-4] For this period, Defense spending shrank 30 percent considering inflation. Figures 2.1 and 2.2 illustrate the trends in discretionary and Defense budget authority and outlays.

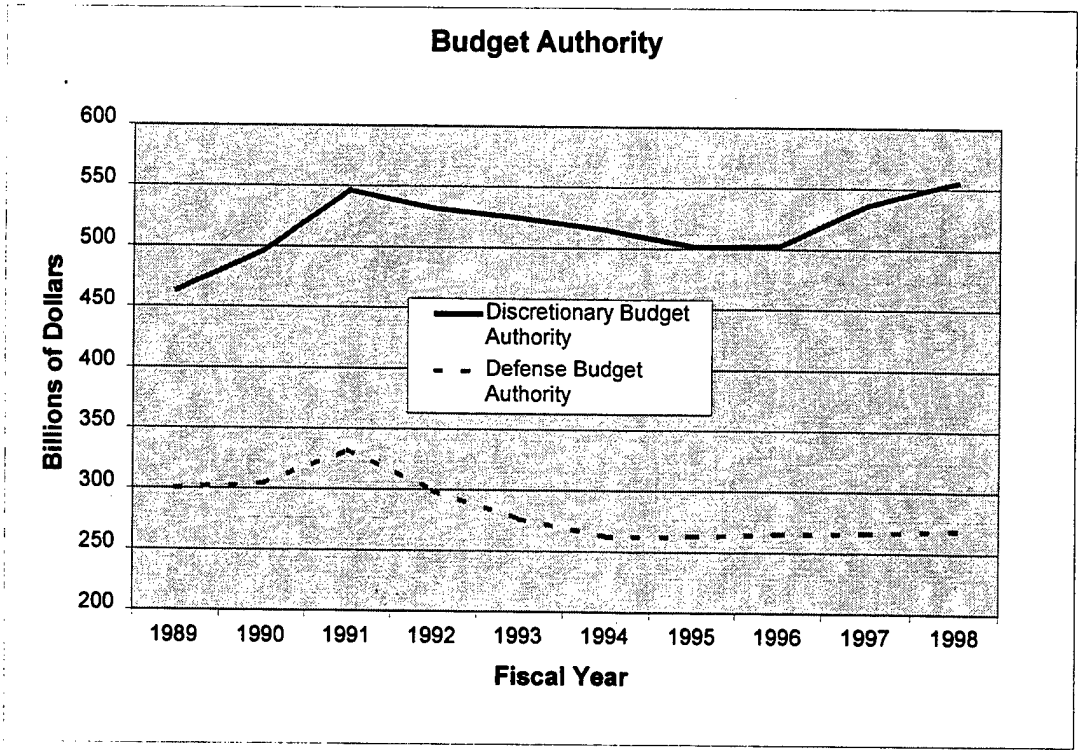


Figure 2.1: FY91-98 Discretionary and Defense Budget Authority (FY92 Dollars). Ref. 9, Table 8-9.

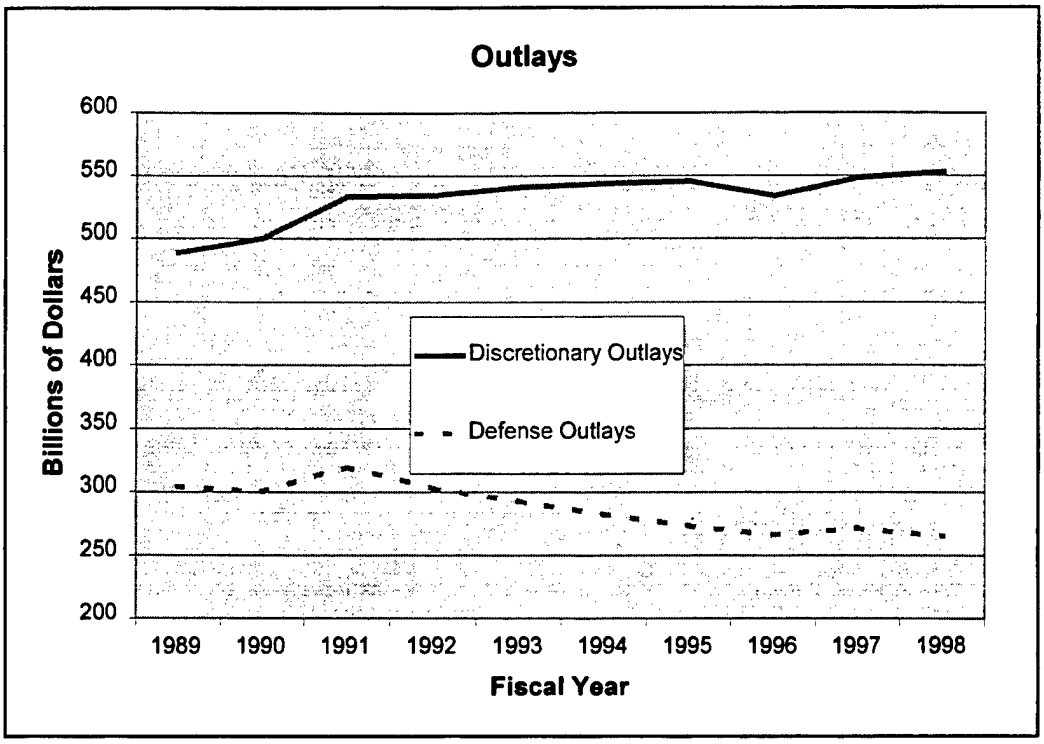


Figure 2.2: FY91-98 Discretionary and Defense Outlays (FY92 Dollars). Ref. 9, Table 8-7.

Discretionary spending under the BEA was structured to redistribute resources to perceived domestic underfunding. Due to the BEA spending limits, domestic spending rose from 34 percent to 48 percent of discretionary outlays. For the same period, Defense shrank from 62 percent to 48 percent of discretionary outlays. For fiscal years 1998-2003, however, the 1997 Balanced Budget Agreement ended the redistribution of funding and maintains an almost equal percentage of discretionary outlays for the two categories. [Ref. 9]

F. THE NAVY BUDGET

President Reagan's military build-up established the goal of a 600-ship Navy. In "The Maritime Strategy," CNO Admiral James D. Watkins stated that strategy drives the entire budget process and the resulting procurement and research and development decisions [Ref. 22, p. 16]. In 1986, Secretary of the Navy John F. Lehman asserted that the 600-ship Navy was affordable and that "we can maintain the size and the current mix of our force through the rest of this century with a 3 percent growth budget" [Ref. 23, p. 40].

The Navy's six year budget strategy is summarized in its Program Objectives Memorandum (POM). Navy POMs for fiscal years 1984 to 1990 reflected the optimism of a 600-ship Navy. However, due to the reprioritization of federal budget deficit reduction, Navy POMs differed significantly from actual funding. After the BEA of 1990, the 1992 and 1994 POMs planned for at least zero growth but actual funding was at a considerably lower rate. Figure 2.3 illustrates the historical trend in POM and actual budget differences.

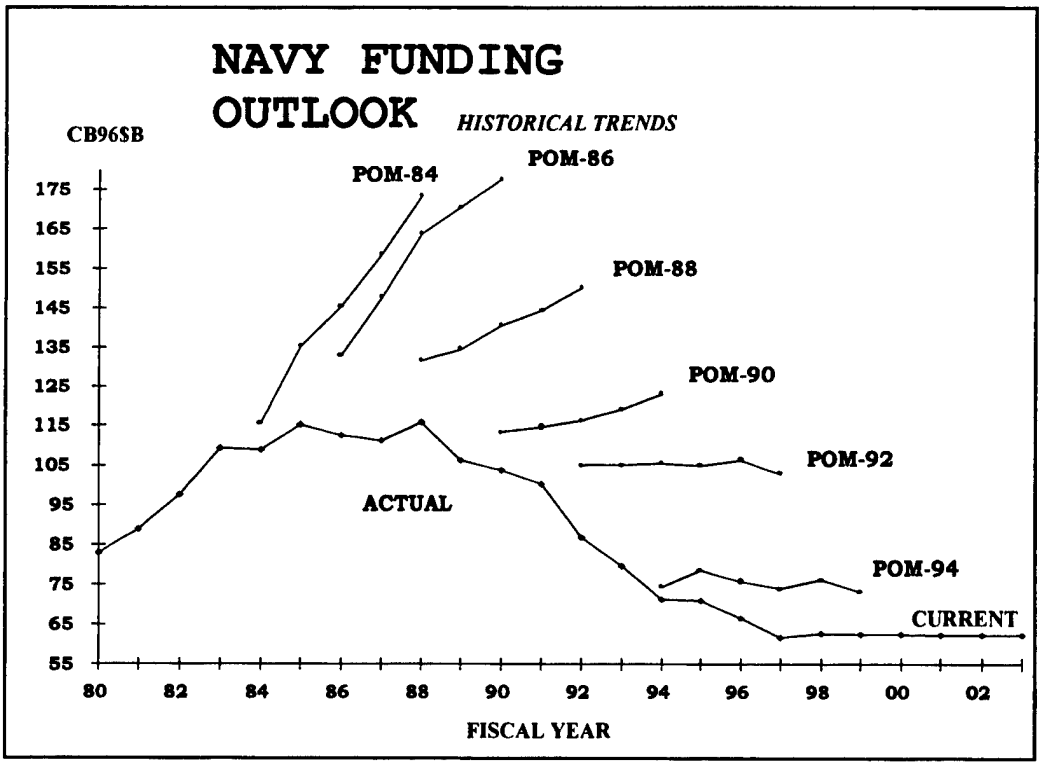


Figure 2.3: FY84-94 Historical Trends between Navy POMs and actual funding. Ref. 24.

Adjusted for inflation, the Navy's TOA declined 34 percent from 1989 to 1998 due to Defense spending reductions. During this period, the Navy suffered an average real growth of negative 4.7 percent per year. [Ref. 11, Table 6-3] Figure 2.4 shows Defense and Navy TOA trends from 1989 to 1998.

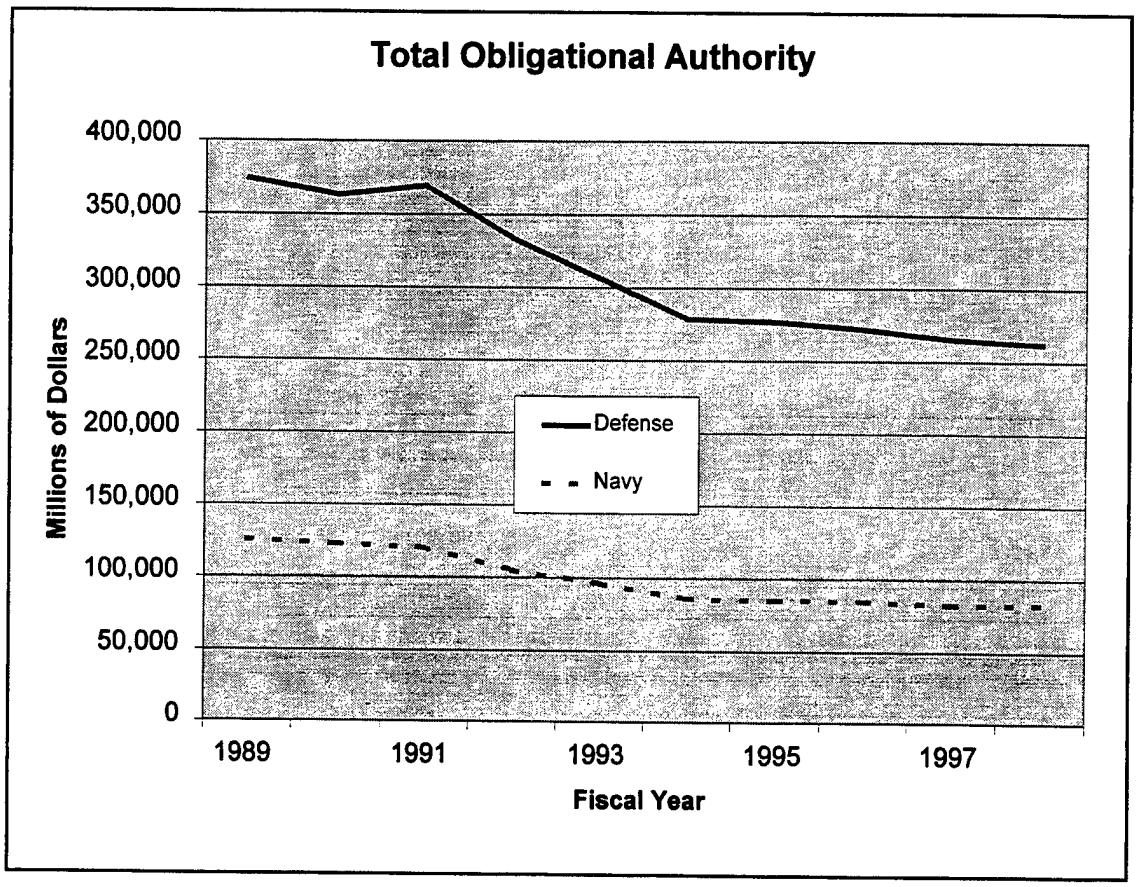


Figure 2.4: FY89-98 Defense and Navy TOA (FY99 Dollars). Ref. 11, Table 6-3.

The Navy's spending categories were reduced dramatically in this constricted financial environment. By fiscal year 1998, operations and maintenance (O&M) dropped 30 percent, procurement 49 percent, and research and development (RDT&E) 31 percent [Ref. 11, Table 6-17]. Figure 2.5 shows the TOA trends for O&M, procurement, and RDT&E for fiscal years 1989-98.

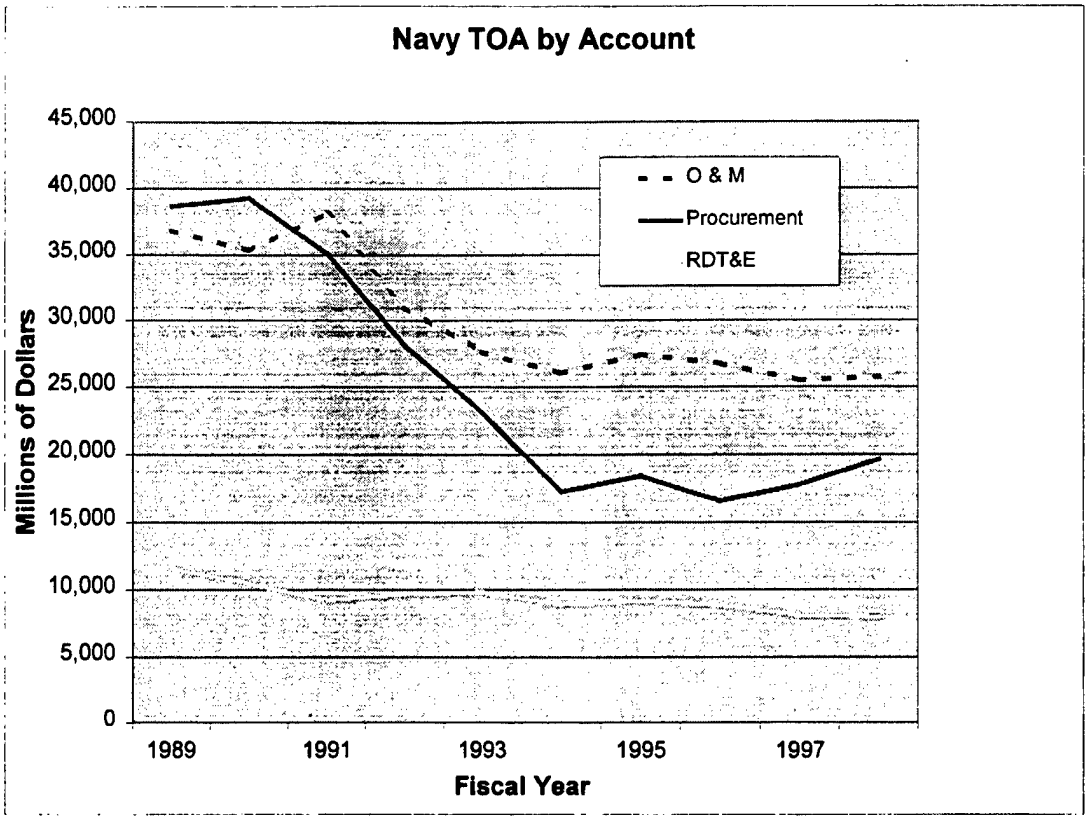


Figure 2.5: FY89-98 Navy TOA for O&M, Procurement, and RDT&E (FY99 Dollars). Ref. 11, Table 6-17.

Since the agreement on the discretionary spending limits in 1990, the Navy, on average, lost 3.6 percent in O&M, 6.4 percent in procurement, and 3.9 percent in RDT&E per year. Procurement experienced the sharpest decline during fiscal years 1991-94, averaging a negative 18.4 percent real growth. [Ref. 11, Table 6-17] The procurement and RDT&E declines are due partly to the migration of funds to cover O&M shortfalls [Ref. 25, p. 1-1].

G. SURFACE COMBATANTS

The dramatic reductions in O&M, procurement and RDT&E curtailed plans for 238 surface combatants for the 600-ship Navy. For surface combatants, the Navy's constrained budgets translated into early decommissioning of ships, reducing new ship procurement rates and reconfiguration of new ship programs.

1. Operations

To decrease annual operating costs, the Navy accelerated the decommissioning of surface combatants in 1989 [Ref. 26, p. 11]. The official service life for cruisers and destroyers is 40 years, for frigates 35 years. [Ref. 1, p. 49] The Navy decommissioned ships before the end of their service lives and, for some, after receiving expensive upgrades.

a. Steam-Powered Combatants

In the late 1980s and early 1990s, the Navy had invested millions in modernizing the Leahy and Belknap-class cruisers with the New Threat Upgrade (NTU). NTU modernized their air/surface search and fire control radars, improved their weapons direction and missile fire

control, converted their MK 10 and MK 26 missile launchers from analog to digital systems and installed SYS 2 Integrated Automatic Target Detection and Tracking System (IADT) [Ref. 27].

Almost immediately after their modernization, the Navy decommissioned the Leahy and Belknap-class cruisers. In addition to the cruisers, the Navy decommissioned ships closer to the end of their service lives, e.g., the Charles F. Adams and Coontz-class destroyers and the Knox-class frigates. Table 2.4 lists the number of surface combatants decommissioned, their time in service, age or average age at decommissioning, and whether they received NTU during the 1990s.

Table 2.4: Surface Combatants Decommissioned After the Cold War. Ref. 26 and 27.

Class	Ships	Years Commissioned	Years Decommissioned	Age or Average Age	NTU
Cruisers					
Long Beach	1	1961	1994	33	
Bainbridge	1	1962	1996	34	
Leahy	9	1962-64	1993-95	31	Yes
Belknap	9	1964-67	1993-95	30	Yes*
Truxton	1	1967	1995	28	
California	2	1974-75	1998	23	Yes
Virgina	4	1976-80	1993-97	28	Yes**
Destroyers					
Coontz	8	1959-61	1990-93	32	
Charles F. Adams	16	1960-64	1991-93	30	
Spruance	7	1975-77	1999	23	
Kidd	4	1981-82	1998-99	16	Yes
Frigates					
Oliver Hazard Perry	17	1976-81	1995-99	19	
Knox	46	1969-74	1991-94	20	
Bronstein	2	1963	1990	27	
Glover	1	1965	1993	28	

*Belknap never received NTU, the remainder of the class did.
**Arkansas and Texas never received NTU.

b. Gas Turbine-Powered Combatants

Beginning in 1995, the Navy began decommissioning some of the less capable gas turbine frigates and destroyers to reduce operating costs. Between fiscal years 1995-99, almost half of the Oliver Hazard Perry-class frigates will be decommissioned or placed into the naval reserve force [Ref. 28 and 29 p. 8]. The four Kidd-class destroyers began decommissioning in 1998. The seven non-

Vertical Launching System (VLS) Spruance-class destroyers will leave the service in fiscal year 1999. [Ref. 30]

c. Nuclear-Powered Combatants

By the end of fiscal year 1998, the last of the expensive nuclear cruisers was removed from service. Each one cost $38.8 million annually to man, operate, and maintain, compared to $29.5 million for a Ticonderoga-class cruiser [Ref. 31, p. 4]. The Navy had concluded that the nuclear cruisers were too costly to operate and modernize [Ref. 32].

Most of the nuclear cruisers went through an extensive modernization program during the early 1990s. The entire California and two of the four Virginia-class cruisers completed modernization with NTU [Ref. 27]. All four of the Virginia-class cruisers either began or were scheduled to begin nuclear refueling. Both California-class cruisers completed a $425 million refueling in 1992 [Ref. 33, p. 230].

2. Recapitalization

a. Cruisers

While the older ships were deactivated, recapitalization of the surface combatant force was delayed. In the 1990s, only two classes of surface combatants were built, Ticonderoga-class cruisers and Arleigh Burke-class destroyers. Since the last Ticonderoga-class cruisers were purchased in fiscal year 1989, the program was not slowed by the discretionary spending limits of the 1990s.

The Ticonderoga-class cruisers will receive the Aegis Cruiser Conversion upgrade between fiscal years 2001 and 2005. The upgrade consists of littoral warfare and "smart ship" modifications to extend the cruisers' useful life. The conversion plan will delay the requirement to develop the second generation 21st century combatant, CG-21, until 2015. This delay will enable an affordable completion of a 32 ship DD-21 procurement. [Ref. 34, p. 26]

b. Destroyers

The budget austerity of the 1990s did have an effect on the procurement rate for Arleigh Burke-class destroyers. In 1982, Secretary of the Navy John Lehman

planned on purchasing 63 Arleigh Burke-class destroyers, beginning with the lead ship in fiscal year 1985, a one year hiatus in fiscal year 1986, three ships in 1987, and finally settling into a five ship per year program beginning in fiscal year 1988 [Ref. 35, p. 85]. According to the plan, the last Arleigh Burke-class destoyers would have been purchased in fiscal year 1999 and delivered in 2004.

Pressures from Congress and within the Department of the Navy (DoN) to economize forced the Navy to stretch out the Arleigh Burke acquisition program. In 1996, only two Arleigh Burke-class destroyers were purchased, and in fiscal years 1999-2003, the Navy only plans to buy three per year [Ref. 1, p. 13 and Ref. 13]. Table 2.5 contains the number of Arleigh Burke-class detroyers purchased and planned through 2003.

Table 2.5: Arleigh Burke-Class Destroyer Procurement FY85-03. Ref. 1, p. 44, and Ref. 12, p. 10.

FY	**85**	**86**	**87**	**88**	**89**	**90**
Quantity	1	0	2	0	5	5
FY	**91**	**92**	**93**	**94**	**95**	**96**
Quantity	4	5	4	3	3	2
FY	**97**	**98**	**99**	**00**	**01**	**02**	**03**
Quantity	4	4	3	3*	3*	3*	3*

* FY99 Budget Planned Procurement.

The surface combatant industrial base and concerned legislators complained about the unstable Arleigh Burke program. In 1998, to save costs and promote a stable industrial base, the Navy implemented a four year multi-year contract for 14 Arleigh Burke-class destroyers. The contract is projected to save up to $1.4 billion during fiscal years 1998-2001. The contract utilizes a long-term acquisition strategy that lowers costs, reduces disruptions from hiring and layoff cycles, level-loads employment, and encourages capital investment in the surface combatant industrial base. [Ref. 36]

3. New Ship Research and Development

a. The Arsenal Ship

The Navy's reduced resources significantly altered the search for new surface combatant programs. The lack of funding for RDT&E culminated in the cancellation of the Arsenal Ship development. In August 1997, the Navy informed Congress that $85 million was needed for program continuation. The fiscal year 1998 Defense Authorization Bill only provided $35 million for development. In December 1997, the Arsenal Ship program was cancelled due to lack of funding and other budget priorities. [Ref. 14, p. 2]

The Arsenal Ship was to have been the first revolutionary ship design since the ballistic submarine. The Arsenal Ship was going to be a relatively low-cost surface combatant, carrying about 500 precision guided missiles. It was to be forward deployed for extended periods of time to the Mediterranean Sea, the Indian Ocean, and the Western Pacific [Ref. 37, p. 13]. There were to be six Arsenal Ships, keeping a total of at least three and possibly as many as five, on station in distant operating areas at any one time. Normally, the Navy must maintain

four to seven combat ships of a given type to keep one ship of that type on station in a distant operating area [Ref. 37, p. 17]. The Arsenal Ship would have changed the planning for overseas presence requirements.

b. The 21st Century Land Attack Destroyer

The future surface combatant programs have adapted to the projected flat Navy budgets. Besides just building new combat systems capabilities, the Navy has placed a new emphasis on weapon affordability issues.

The emphasis on affordability is shown with the first of the 21st century surface combatant (SC-21) family, DD-21, the Land Attack Destroyer. Projected low shipbuilding budgets, declining operations and maintenance budgets, coupled with a need to recaptilize the submarine, carrier, and logistics fleets in the 21st century, dictated that the next surface combatant must be an affordable ship to build and operate [Ref. 36]. The development of DD-21 has focused on ship life cycle costs, vice acquisition cost.

DD-21 is targeted to cost $750 million (FY96 dollars) and its operations, maintenance and upgrades will cost one-third as much as a conventional destroyer [Ref.

38, p. 12]. While traditional manning for an equally capable destroyer would be 440, DD-21's objective is 95. This will be accomplished by increased automation, better maintenance technology and optimizing manning functions [Ref. 39]. Even though DD-21 will be the most capable surface combatant ever, the planned 32 destroyers will be less of a burden on the Navy's resources than any other class of ships.

H. SUMMARY

The demise of the Cold War negated the justification for the Reagan Defense build-up. The post-Cold War period saw deficit reduction take precedence, as well as a shift in discretionary spending priorities away from Defense. The government changed its budgetary strategy of deficit targets to limiting spending and guaranteeing the baseline level of revenues. The discretionary spending limits of the BEA took the majority of its deficit reductions from the negative real growth of Defense spending.

Likewise, Navy budgets were sharply reduced from 1990 to 1998. O&M, procurement, and RDT&E funding steadily declined throughout the period. Surface combatant force levels dropped through accelerated deactivation and

decreased rates of new ship procurements. The Arsenal Ship, a program projected to significantly alter surface combatant requirements, was cancelled due to insufficient funding. Planning for surface combatants of the 21st century is now focused on life cycle affordability. The first of the SC-21 family, DD-21, incorporates innovative technology and manning to reduce life cycle costs.

III. NAVAL DOCTRINE AFTER THE COLD WAR

A. INTRODUCTION

This chapter explains the post-Cold War change in naval strategy and its effect on surface combatant forces. The first part of the chapter focuses on the major strategy papers that demonstrated the shift in emphasis from planning war at sea toward supporting joint operations on land from the sea. To illustrate naval strategy before the transition, "The Maritime Strategy" (1986) is explained, including the Soviet threat it was to counter in the 1980s. Then "The Way Ahead" (1991) is examined to discuss the doctrinal transition due to the collapse of the Warsaw Pact. Finally, "...From the Sea" (1992) and "Forward...From the Sea" (1994) are reviewed to show the direction of present naval strategy.

The second part of the chapter focuses on the direction of surface combatants due to the new naval strategy. This is illustrated by the development of new weapon systems and combatant concepts in support of the littoral battlespace.

B. THE SOVIET THREAT

The competition between the Soviet Union and the United States escalated during the 1970s and 1980s. The U.S. increasingly felt threatened by the growth of Soviet military power and their expansion into the Third World.

Through military aid, insurgency, or direct coercion, the Soviets were expanding and strengthening their influence throughout the world in the 1980s. In 1979, the Soviets invaded Afghanistan in order to install a new communist regime. In 1981, Polish authorities imposed martial law to crack down on the Solidarity movement and avert a Soviet invasion. By 1984, the Soviets were delivering 33,000 metric tons of military equipment per year to Nicaragua, in addition to coordinating advisors from Cuba, East Germany, Libya, and North Korea. Through its clients, Cuba and Nicaragua, the Soviets were fostering guerrilla warfare in El Salvador and Guatemala and urging Honduran leftists towards revolutionary activity during the early 1980s. [Ref. 40]

At the same time, the Soviet military was in the midst of a significant military build-up through the improvement of weapon systems and enlargement of conventional forces.

From 1981 to 1985 Soviet ground divisions grew from 181 to 199 in strength. In 1984, 3,200 new main battle force tanks were manufactured and added to the existing 52,000 tank inventory. Their new strategic Backfire bombers were being produced at a rate of 30 per year. The fourth Kiev-class carrier was being prepared to join the fleet and construction continued on an entirely new class of aircraft carrier rivaling U.S. carrier capabilities. The second nuclear-powered Kirov-class cruiser was completed and a third ship was in construction. Nine separate classes of Soviet submarines were in production, including the third Typhoon-class strategic ballistic missile submarine. [Ref. 40]

During the 1970s and 1980s, Soviet worldwide influence increased dramatically through overseas deployments of a new, more capable blue-water navy. Not since WWII had there been a potential threat at sea to challenge U.S. global interests [Ref. 41, p. 47]. In 1985, the Soviet fleet was comprised of three aircraft carriers, 287 surface combatants, 380 submarines, and 1,913 other minor combatants and auxiliaries. The Soviets developed a formidable blue-water force, able to challenge U.S. global interests. The Soviet fleet regularly deployed to the

Indian Ocean, West Africa, South China Sea, and Pacific Ocean. In Cam Ranh Bay, Vietnam, the Soviets built a large forward deployed naval base with airfields for bombers and fighters [Ref. 40, p. 35]

Closer to home, Victor-class nuclear attack submarines were routinely operated outside of principal U.S. naval bases. The Soviet fleet frequently operated out of Cuban naval bases and conducted joint training with the Cuban navy. Their exercises consisted of deploying to the chokepoints in the Caribbean Sea and Gulf of Mexico. [Ref. 23, p.32]

C. "THE MARITIME STRATEGY"

In 1986, the *U.S. Naval Institute Proceedings* published "The Maritime Strategy" by Secretary of the Navy John F. Lehman, CNO Admiral James D. Watkins, and Commandant of the Marine Corps (CMC) General P.X. Kelly. "The Maritime Strategy" was the most definitive and authoritative public statement ever of naval strategy for the Cold War period. The unclassified strategic paper, consisting of three parts, "The Maritime Strategy," "The Amphibious Warfare Strategy," and "The 600-Ship Navy," was collectively known as "The Maritime Strategy." "The

Maritime Strategy" and "The Amphibious Warfare Strategy" portions described naval strategy for global confrontation with the Soviet Union. "The 600-Ship Navy" explained the rationale for the naval build-up. [Ref. 22]

Using "The Maritime Strategy," the DoN planned for the use of naval forces from peacetime operations through global war to war termination. The primary strategy was deterring global war with the Soviets through U.S. engagement of Soviet expansion intititives. If deterrence failed, then naval forces were to bring an end to the conflict on terms favorable to the U.S. [Ref. 22]

The Navy was to accomplish deterrence through deployment of a 600-ship fleet. The fleet was organized into carrier, battleship, amphibious, and underway replenishment battle groups. In peacetime, the battle groups were to be forward deployed and engaged around the world to deter crisis. [Ref. 23]

In the event of global war, multiple battle groups were to mobilize and escort reinforcements to Europe. In addition to Europe, the Navy was to exert global pressure on all fronts. The Soviets' central objective was Europe. The U.S., through its multiple battle groups, was to divert the Soviet's attention to other geographical fronts. The

Navy and Marine Corps were to attack throughout the Soviet homeland and draw Soviet resources from the European theater. [Ref. 22]

Naval forces were to prepare for a fight throughout the world. The battles were to take place in the Mediterranean, Caribbean, Middle East, Southeast Asia, Indian Ocean, and Bering Strait. The North Atlantic, specifically the Greenland-Iceland-United Kingdom Gap, was a key strategic area for the war. The goal was to preserve safe lanes of transit. [Ref. 22]

Naval warfare was expected to consist of open-ocean conflicts. U.S. battle groups were to prepare for confrontations with Soviet long-range bombers, submarines and surface action groups. The focus was anti-submarine, anti-surface, and anti-air warfare for the destruction of the Soviet fleet. Strike warfare was to be used in support of NATO fronts in Europe or in Northeast Asia. Amphibious warfare consisted of Marine amphibious brigade size raids or forcible entries to seize beachheads. [Ref. 22]

Joint operations received relatively little emphasis in "The Maritime Strategy." In the paper, efforts towards jointness were demonstrated by doctrine for employment of Air Force AWACS and B-52s in maritime missions and the

identification of aerial refueling requirements. The strategy also mentions the use of the Coast Guard in time of war. [Ref. 22, p. 5] Compared to present naval doctrine, joint operations during the period of "The Maritime Strategy" were not the priority for conducting sea control and open-ocean warfare.

D. "THE WAY AHEAD"

In 1991, the U.S. Naval Institute published "The Way Ahead" in its April issue of the *Proceedings*. Written by Secretary of the Navy H. Lawrence Garrett III, CNO Admiral Frank B. Kelso, and CMC General Carl E. Mundy Jr., "The Way Ahead" signaled the beginning of change for the Navy as it moved forward to new challenges in naval strategy in the post-Cold War era.

This strategic paper was published during a transitional period, both internationally and domestically. In 1991, the Soviet Union was in its last year of existence and the Warsaw Pact had dissolved the year before. The BEA in 1990 was enacted and Defense resources were subject to tight discretionary spending controls. With the tight fiscal environment, DoD pursued increased joint cooperation to produce budgetary savings. In 1991, the U.S. was

celebrating the Desert Storm victory, an unprecedented success since WWII.

The Navy's participation in the Gulf conflict was seen as minimal and the Tailhook scandal was under investigation in Congress [Ref. 20, p. 179]. The Marine Corps played a vital role in the Desert Storm land assault and was exerting more influence within the DoN [Ref. 42].

For this transitional period, "The Way Ahead" directed naval strategy to the unstable Soviet military power and possible regional contingencies. The new strategy acknowledged the changing world environment but warned against a resurgent Soviet Union:

> While our new defense strategy is geared primarily to regional threats to U.S. interests, it also must take into account the uncertainty surrounding the ongoing upheaval in the Soviet Union and Central Europe, and the capabilities of the Soviet Military that we expect to remain in place during the foreseeable future . . . We must preserve our ability to reconstitute adequate forces, if faced with a resurgent global threat to peace. [Ref. 43, p. 38]

In addition to preparing for a Soviet reemergence, naval leadership focused on threats to regional stability. The invasion of Kuwait by Iraq showed the U.S. the turmoil that can be created by a rogue state seeking regional power. Humanitarian assistance, nation-building, security

assistance, peacekeeping, counternarcotic, counterterrorism, counterinsurgency, and crisis response operations were to receive new emphasis as naval missions [Ref. 43, p. 41].

With new Defense spending restraints in fiscal year 1991, the Navy argued for a greater budget share. The Navy felt that their worldwide engagement of the Soviets was a major factor in the Cold War termination. In addition, "The Way Ahead" pointed out that the Navy was best suited for the changing world environment. With overseas bases diminishing, the Navy argued that it was the ideal force since it was forward deployed and self-reliant. [Ref. 44, p. 171] During testimony for the House Armed Services Committee in February 1991, CNO Admiral Trost was paraphrased in *Proceedings* as saying:

> Even if one were to put one's hand over the map of eastern Europe and disregard it entirely as a defense planning concern, the United States would still require a navy not only of about the same size, but of the same general structure as well. [Ref. 44, p. 168]

Congress did not like the Navy's new strategy in 1991. Critics lambasted the Navy for being unwilling to recognize and respond to the post-Cold War era [Ref. 44, p. 171]. The poor reception of the "The Way Ahead" and the Navy's

force strategy set the stage for a new vision to be introduced in 1992.

E. ". . . FROM THE SEA"

In 1992, Secretary of the Navy Sean O'Keefe, CNO Admiral Kelso, and CMC General Mundy signed a new Navy and Marine Corps white paper called "...From the Sea." After strong criticism for the Navy's lack of post-Cold War strategy changes in the Navy's 1991 paper, "...From the Sea" signaled a new vision for American sea power.

Preparation for global war with the Soviet Union was shelved and major regional contingencies in areas of critical U.S. interest became the primary planning objective. Naval forces no longer were to focus on open-ocean warfighting against enemy fleets. Instead, they were to emphasize joint littoral warfare. [Ref. 4]

Littoral warfare was to present a new challenge to naval forces. It is a complex, compressed battlespace that can place high demands on naval capabilities. In certain respects, littoral operations can be more demanding on naval forces than the Cold War scenario of mid-ocean operations against Soviet maritime forces. [Ref. 12, pp.

19-20] The Navy summarized its view on the littoral environment in "…From the Sea":

> The littoral region is frequently characterized by confined and congested water and air space occupied by friends, adversaries, and neutrals - making identification profoundly difficult. This environment poses varying technical and tactical challenges to naval forces. It is an area where our adversaries can concentrate and layer their defenses. In an era when arms proliferation means some Third World countries possess sophisticated weaponry, there is a wide range of potential challenges.
>
> For example, an adversary's submarines operating in shallow waters pose a particular challenge to naval forces. Similarly, coastal missile batteries can be positioned to "hide" from radar coverage. Some littoral threats - specifically mines, sea-skimming cruise missiles, and tactical ballistic missiles - tax the capabilities of our current systems and force structure. Mastery of the littoral should not be presumed. It does not derive directly from command of the high seas. It is an objective which requires our focused skills and resources. [Ref. 4, p. 94]

To support the new doctrine, the Navy and Marine Corps packaged their capabilities differently in "…From the Sea" than prior strategic policy papers. In this paper, the Navy and Marine Corps team is a joint warfighting tool to be utilized for a wide range of missions by unified commanders. The new direction for the naval service is summarized in the motto "Naval Expeditionary Forces - Shaped for Joint Operations - Operating Forward, From the

Sea - Tailored for National Needs." The naval expeditionary forces are to respond to any crisis and can provide the initial "enabling" capability for joint operations, as well as continued participation in any sustained operation. The paper asserts that the Navy and Marine Corps are trained to be a "sea-air-land" team, able to respond immediately to the unified commanders as they execute national policy. [Ref. 4]

Joint and combined operations are a recurring theme in "...From the Sea." The white paper asserts that the Navy and Marine Corps can seize and defend an enemy's port, naval base, or coastal air base to allow entry by heavy Army or Air Force forces. "...From the Sea" also asserts that naval commanders can command a joint task force while the operation is primarily maritime and shift command ashore at the unified commander's discretion. The paper finishes with immediate tasks for the Navy and Marine Corps. The majority of these tasks are changes to structure, weapons systems, training, and warfare for joint operations. [Ref. 4] This shift to jointness was a dramatic attitude change from the earlier budgetary arguing by the Navy in 1991.

To support joint operations, the new direction of "...From the Sea" created the concept of battlespace

dominance. Battlespace dominance is the control of sub-surface, air, surface, and land dimensions to ensure successful littoral operations [Ref. 45, p. 63]. Traditionally, the Navy practiced sub-surface, air, and surface warfare for the destruction of the Soviet fleet and strike warfare to support the NATO front. With "...From the Sea," the Navy was to direct its warfare skills to battlespace dominance to influence events on land.

The new concept of battlespace dominance changed traditional naval warfare. Air warfare expanded its mission responsibilities to theater missile defense (TMD), placing a protective umbrella over ground operations. In the new littoral environment, sub-surface warfare was to consist of searching for small diesel submarines and mines in shallow water vice hunting Soviet ballistic missile submarines. Instead of facing major combatants, surface warfare was to direct its attention to defending against small missile patrol boats and providing more substantial naval surface fire support. The Navy placed a new emphasis on Tomahawk cruise missile capabilities for both joint strike and ground warfare. [Ref. 4]

F. "FORWARD. . . FROM THE SEA"

In 1994, the Navy updated and expanded "...From the Sea" with "Forward...From the Sea." The new paper reaffirmed the direction of "...From the Sea" and further explained the Navy and Marine Corps forward presence role. [Ref. 46]

"Forward...From the Sea" placed a greater emphasis on peacetime operations and the role played in such operations by the Navy and Marine Corps. The white paper stresses that naval forces, operating from "sea bases" in international waters, can prevent conflicts and control crisis. This is accomplished by a wide range of missions and tasks, such as making protocol visits in foreign ports, and conducting regional, bilateral, and multilateral training exercises to enhance diplomacy and improve interoperability amongst allies. In emergencies, forward deployed forces can rapidly respond to humanitarian assistance and disaster relief efforts. Additionally in the 1990s, the Navy has provided substantial contributions to U.S. counternarcotics operations around Central and South America [Ref. 1, p. 37].

"Forward...From the Sea" expands the mission of TMD to the maintenance of peacetime stability. The paper asserts

that ballistic missile defense is not only useful for conflict but also conventional deterrence:

> Forward deployed surface warships - cruisers and destroyers - with theater ballistic defense capabilities will play an increasingly important role in discouraging the proliferation of ballistic missiles by extending credible defenses to friendly and allied countries. [Ref. 46, p. 4]

Due to Russia and China's attempts to acquire wealth through military exports, ballistic missile proliferation has grown. Nations such as Iran, Iraq, North Korea, Libya and Syria have active programs in pursuit of weapons of mass destruction (WMD), placing regional stability in jeopardy. [Ref. 47, p. 56] In this uncertain security environment, an Aegis combatant off a coast can protect allies against rogue nations and terrorists using WMD. The Navy asserts that ballistic missile defense will slow proliferation and promote regional stability.

G. DOCTRINAL TRENDS

The shift in naval doctrine is illustrated by comparing the defined threats, strategies, naval missions, and warfare asserted by the four papers. Table 3.1 is a comparison of the major naval strategic policy papers for the Cold War transition.

Table 3.1: Major Naval Strategic Policy Papers, 1986-1994.

	"The Maritime Strategy" (1986)	"The Way Ahead" (1991)	"...From the Sea" (1992)	"Forward...From the Sea" (1994)
Threat	Soviet Union, Warsaw Pact	Soviet Union, Rogue Nations, Terrorism, WMD	Rogue Nations, Terrorism, WMD	Rogue Nations, Terrorism, WMD
Strategy	Global War	Global War, Regional Conflicts	Regional Conflicts	Regional Conflicts
Type of Naval Warfare	Open-Ocean	Open-Ocean	Joint Littoral	Joint Littoral
Naval Mission	Sea Control	Sea Control	Battlespace Dominance, Power Projection	Battlespace Dominance, Power Projection

"The Maritime Strategy" was classic naval doctrine, demonstrating a strong influence from Admiral Thayer Mahan. Mahan believed that empires rose and fell with their control or lack of control of the sea. He believed a navy should be comprised of grand "capital" ships and participate in large confrontations. He emphasized strategic points and maintaining the sea lanes of communication [Ref. 48]. Utilizing this approach in "The Maritime Strategy," carrier and battleship battle groups and submarines were to achieve sea control and secure the

strategic chokepoints through destruction of the Soviet fleet.

The new trend in naval doctrine outlined in "...From the Sea" is contrary to Mahan's theories. Mahan did not believe in the employment of naval forces against land forces. In the littoral, he felt naval forces locked up their offensive strength in a defensive effort and that they could not match land forces' defensive capabilities. [Ref. 48]

H. SURFACE COMBATANTS

The post-Cold War naval doctrine changed the focus and technological requirements of surface combatants to joint littoral warfare. Surface combatants are now expected to influence events ashore through battlespace dominance and power projection. To increase their influence, the Navy has placed a greater priority on TMD, strike warfare, and naval surface fire support operations. For battlespace dominance and power projection, the Navy is in the process of improving existing surface combatant capabilities and shaping new ship concepts.

1. Battlespace Dominance

a. Theater Ballistic Missile Defense

DoD recognized early on that surface combatants had an inherent TMD capability in its Aegis weapons system, demonstrated by its success in detecting Iraqi Scud missiles during the Gulf War. The Navy has become an active participant in the effort by the Ballistic Missile Defense Organization (BMDO) to develop a maritime capability against this threat. [Ref. 49, p. 12]

The Navy Theater Ballistic Missile Defense (TBMD) program is based on evolving the air defense capabilities of Aegis combatants to contend with the intercept requirements of ballistic missiles. The first stage of evolving this capability is called the Navy Area TBMD program. During this stage, the Aegis combat system will be upgraded to support area TMD and Navy SM-2 Standard Missiles will be modified to engage ballistic missiles. This area defense program will provide a lower-tier intercept capability. [Ref. 50, p. 2-12]

The second stage of the Navy TBMD program will expand the battlespace of the Navy Area TBMD system through additional upgrades to the Aegis combat system. The Navy

will also develop an upper-tier interceptor, the SM-3 Standard Missile, to provide a theater-wide TBMD capability to intercept WMD. SM-3 Standard Missiles will provide the kinetic kill (skin to skin) capability to be effective against WMD. [Ref. 50, p. 2-12]

Naval forces are ideal for employment of TBMD to an undeveloped region. Naval TBMD provides immediate, visible support for allies while acting as a non-intrusive sea-based entity. For littoral protection, surface combatants can protect U.S. interests from the sea. [Ref. 50, p. 2-9] During the early stages of a conflict, Aegis combatants may be the only U.S. theater air defense capability. The TMD systems on Aegis combatants are intended to create an immediate defensive umbrella for expeditionary forces as they assemble and move into the theater of operations. [Ref. 50, p. 2-13]

During amphibious operations, Aegis combatants will perform TMD coverage and coordinate the Marine Corps Hawk batteries, a lower tier missile defense. As Army forces are inserted, Aegis combatants will expand their coordination of the battlespace and supervise Patriot lower tier and Theater High-Altitude Air Defense (THAAD) upper tier missile systems. [Ref. 50, p. 2-13]

By September 1999, the Navy plans to achieve an area theater missile defense capability on at least two cruisers for operational testing and use in a national emergency. The remaining Aegis cruisers and destroyers will be equipped with theater missile defense capabilities between fiscal years 2000 and 2011. [Ref. 51, p. 2]

b. Cooperative Engagement Concept

A vital technology for Navy TBMD is the Cooperative Engagement Concept (CEC). This computer-based information exchange system permits the simultaneous sharing of detailed targeting information between ships or forces at extensive ranges within the littoral area. CEC increases reaction time and firing opportunities against enemy missile attacks. By creating a single composite threat picture from all the sea, air, and land-based sensors in the area, ships with less sophisticated combat systems will have the same quality sensor, decision, and engagement information as Aegis-equipped ships. [Ref. 1, p. 66]

This system is designed to enhance capabilities to rapidly respond to enemy attacks by providing an over-the-horizon capability. Units will be able to defend against threats that are not yet detected by organic

sensors. The Navy believes this capability will be a major defense against anti-ship sea-skimming cruise missiles. [Ref. 1, p. 67]

CEC is the Navy's first development towards network centric warfare. The new warfare concept is a shift from platform-centric to network centric architectures. The Navy wants to distribute the tactical picture among a number of platforms through networking. This is vital since the littoral environment requires integration of sensors and combat systems in a common tactical picture. [Ref. 52]

As of November 1998, two Aegis cruisers, an aircraft carrier, and an amphibious assault helicopter carrier have CEC installed. The Navy plans to install CEC on additional aircraft carriers, surface combatants, amphibious ships, and carrier based E-2C aircraft between fiscal years 2000 and 2010. [Ref. 1, p. 67]

2. Power Projection

a. Tomahawk

The Tomahawk cruise missile enables surface combatants to launch attacks against land targets from long ranges in all types of weather. The Navy is making

various improvements to the Tomahawk to increase its effectiveness, flexibility, and responsiveness and strengthen mission planning capabilities aboard ships. In addition to upgrades to the missile's guidance, navigation, and control systems, the Navy plans to incorporate a penetrating warhead, which will expand potential targets to include weapon bunkers and reinforced structures. [Ref. 1, p. 64]

Significant changes are planned for tactical employment of Tomahawk in support of the ground war. Presently, Tomahawks can be deployed against strategically important targets such as command and control facilities and radar sites, under the direction of the unified commanders. [Ref. 1, p. 64] The new tactical variant of Tomahawk will be capable of loitering for 3.5 hours and up to 200 nautical miles from launch point and could be redirected from programmed targets to higher priority, emergent or relocated targets [Ref. 53, p. 11]. Using the missile for tactical applications could have a significant impact on ship operations and the number of Tomahawk missiles in theater due to the potential increase in missions and targets. Additionally, the U.S. military is changing the command and control structure for strike

warfare, which will allow theater commanders to use Tomahawk missiles for tactical applications. [Ref. 1, p. 4]

b. Naval Surface Fire Support

The 1992 Naval Surface Fire Support (NSFS) Mission Needs Statement (MNS) and the Marine Corps Operational Maneuver From the Sea (OMFTS) concept established requirements for a combination of guns, rockets, and missiles with sufficient range, accuracy, and lethality to meet a wide range of littoral missions [Ref. 53, p. 11]. The Navy is developing a variety of weapon systems that can provide these capabilities.

(1) Naval Gunfire Support. The Navy has acquisition programs that will produce a 5-inch/62-caliber gun system by 2001, capable of delivering rocket-assisted projectiles to an objective range of 63 nautical miles. The rocket-assisted projectiles are called Extended Range Guided Munitions (EGRM) and utilize a Global Positioning System (GPS) receiver to navigate. [Ref. 54, p. 34]

(2) Vertical Gun for Advanced Ships. The Navy is also developing the Vertical Gun for Advanced Ships (VGAS), capable of employing GPS and an inertial guidance system for a range of 100 nautical miles. The VGAS concept includes dual 52-caliber, 155mm guns capable of firing 3-12

rounds a minute from a magazine storing 750 to 1,500 rounds. The system is designed for DD-21 and will begin development in fiscal year 1999. [Ref. 54, p.34]

(3) Land Attack Standard Missile. To meet the Marine Corps' requirement of responsiveness, or the time between target designation and its destruction, the Navy is pursuing the Land Attack Standard Missile (LASM). Its mission is interdiction and counter-battery fires in support of forces ashore. The LASMs are SM-2 Standard Missiles converted from anti-air to land attack missiles. They will have payloads of up to 1,000 pounds and a range of 250 nautical miles [Ref. 55, p. 36]. A stockpile of 1200 SM-2 missiles is available for retrofit. Flight demonstrations were done in fiscal year 1998 and more are scheduled in fiscal year 1999 with an initial operating capability scheduled for 2003. [Ref. 56]

3. New Ship Concepts

Two new ship concepts were designed specifically to operate in the joint littoral environment. The Navy began development of the Arsenal Ship, later cancelled, as explained in Chapter II, and the Land Attack Destroyer, DD-21.

a. The Arsenal Ship

The Arsenal Ship was to provide U.S. unified theater commanders-in-chief (CINCs) with substantial in-theater or early arriving firepower in the form of 500 precision-guided missiles of different kinds, mostly for attacking targets on land. The Arsenal Ship's missiles were to be controlled and targeted by joint U.S. military commanders on other ships, aircraft, or shore stations. [Ref. 37, p. 13]

Since the Arsenal Ship was to act as a "remote magazine," its combat system would have been relatively simple and inexpensive. The ship was to receive data from other ships, aircraft, satellites, and shore stations using CEC and other data links. The targeting, mission planning, and command-and-decision functions of the ship's weapons were to be located aboard another unit. In addition to precision-guided missiles, the Navy planned to install the new 5-inch/62-caliber gun or VGAS. [Ref. 37, p. 20]

b. The 21st Century Land Attack Destroyer

As a revolutionary new platform, the 21st Century Land Attack Destroyer (DD-21) will be built from the keel up with the tenets of Network Centric Warfare and offensive distributed firepower. The 21st Century Land Attack

Destroyer will be a multi-mission ship, meeting forward presence and deterrence requirements of the geographic CINCs. It will operate with naval, joint, and combined maritime forces, contributing to joint and combined battlespace dominance and power projection in littoral operations. DD-21's primary mission will be supporting ground forces. It is designed to stop a ground assault through power projection. [Ref. 53, p.11]

The Land Attack Destroyer will require greatly improved capabilities in a number of areas. DD-21 will be equipped with a 155mm howitzer surface fire support vertical gun and EGRMs. LASMs and the tactical variant Tomahawk will be in DD-21's weapon arsenal for long-range power projection. It will have the most advanced undersea warfare combat systems suite, specifically designed for the environmental challenges and operational threats posed by the littorals. Its hangar will contain room for both attack helicopters and a system of Unmanned Aerial Vehicles (UAVs). The DD-21 ship design will significantly reduce radar signatures by utilizing the latest in stealth technology. [Ref. 57]

As of 1998, two shipbuilding design teams, Ingalls Shipbuilding and Bath Iron Works, were working on

the development of DD-21. Construction is to begin in fiscal year 2004 and the lead ship is scheduled to enter the fleet in fiscal year 2008 [Ref. 52].

I. SUMMARY

Naval strategy and warfare have changed dramatically in the last two decades. The Soviet's influence and expanding military power alarmed the U.S., provoking a massive U.S. military build-up and an increased confrontational focus. The Navy's Cold War strategy of Soviet containment was outlined in 1986 with "The Maritime Strategy." This naval strategy emphasized global warfare on the open-ocean with the Soviet fleet.

The dissolution of the Warsaw Pact and break-up of the Soviet Union changed the national strategy, and in turn, naval strategy. In 1991, the Navy unsuccessfully tried to direct a new naval strategy in the white paper "The Way Ahead."

In 1992, "...From the Sea" was published, providing a new vision for naval warfare. Naval forces were to focus on joint littoral warfare. The 1994 white paper "Forward...From the Sea" reasserted the new emphasis on

littoral operations and explained the role of naval forces in peacetime stability.

In support of the new naval strategy, surface combatants shifted their warfare emphasis from war at sea to war in the littoral. Instead of escorting battle groups on the open-ocean, surface combatants are to have a direct influence on ground campaigns.

Surface combatants will achieve greater influence through battlespace dominance and power projection. The Navy is in the process of developing weapons systems for surface combatants to provide theater ballistic missile defense and increased naval surface firepower. The next generation of surface combatants, Arsenal Ship and DD-21, were specifically designed with capabilities in support of littoral operations.

To summarize, examining the two most recent destroyer programs illustrates the change in naval doctrine and warfare for the post-Cold War period. In 1986, the new battle force combatant, the Arleigh Burke-class destroyer, was under construction. It was to be an advanced multi-mission Aegis combatant, designed to fight the Soviet fleet and long-range bomber squadrons. Over a decade later, the 21st Century Land Attack Destroyer, DD-21, is being designed

with massive littoral firepower, operating on a network provided tactical picture. The Cold War designed Arleigh Burke-class destroyers are being modified to conduct theater ballistic missile defense and extended gunfire support for the littoral battlespace. The 1980s and 1990s' concepts for destroyers clearly demonstrate the naval doctrine shift from war at sea to land attack.

IV. OPNAV REORGANIZATION

A. INTRODUCTION

In 1992, the OPNAV Staff was reorganized and Navy program planning was changed. This chapter explains the OPNAV Staff reorganization and the subsequent change to the program planning process up until the Secretary of the Navy's review. This is accomplished by describing the makeup of the staff and the programming process before and after the reorganization. The effect of these changes is then examined in relation to the first budget after the reorganization, fiscal year 1994, and surface combatant planning. In addition, the development of a new assessment process in 1998, Integrated Warfare Architectures, is explained, including the implications for surface combatants.

B. OPNAV STAFF

In 1986, the OPNAV Staff was reorganized by CNO Admiral Carlisle A. H. Trost to strengthen the CNO's position. Admiral Trost's reorganization shifted away from the platform focus of OPNAV and back to the functional focus the organization had after WWII. He made the warfare

area deputies assistant chiefs and the major directors deputy chiefs. The five new Deputy Chiefs of Naval Operations (DCNOs) became Manpower, Personnel, and Training (OP-01), Logistics (OP-04), Plans, Policy, and Operations (OP-06), Naval Warfare (OP-07), and Navy Program Planning (OP-08). The new Assistant Chiefs of Naval Operations (ACNOs) were Undersea Warfare (OP-02), Surface Warfare (OP-03), and Air Warfare (OP-05). [Ref. 58, p. 125] Figure 4.1 depicts the OPNAV Staff organization from 1986 to 1992.

The deputy positions, with responsibilities that crossed warfare boundaries, such as program planning, were designed to share influence with the assistant positions whose responsibilities focused within a warfare area, such as surface warfare [Ref. 58, p. 2]. In reality, decisions about the allocation of resources within the Navy had been worked out through a staff dominated by five major spokesmen. Three of these were vice admirals who advocated the perspectives and resource claims of the Navy's three warfare communities. These were the so-called "platform barons," a term implying their relative independence and equal power status. Their "fiefdoms" were naval aviation, surface warfare and submarines and included the research,

development, and acquisition bureaucracies that worked for and within these platform categories. [Ref. 59, p. 70]

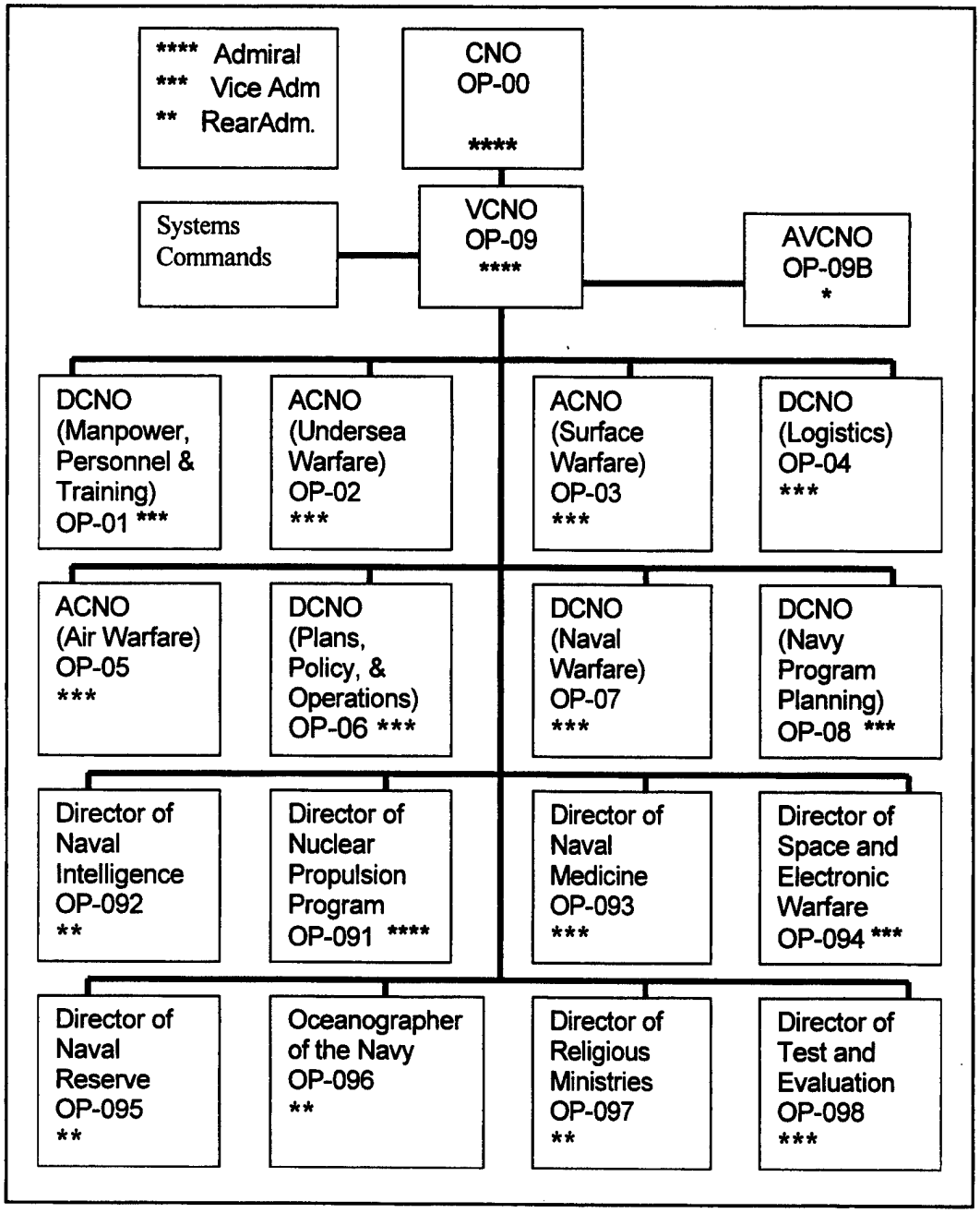


Figure 4.1: OPNAV Staff, 1986-1991.

The other two major spokesmen were OP-07, Naval Warfare, and OP-08, Program Planning. The former was charged with reconciling the resource claims of each warfare sponsor with a general vision for the Navy through the "warfare appraisal process". OP-08 was responsible for translating the results of the appraisal process into the PPBS. This structure was consciously designed in the early 1970s to stimulate competitive views on the Navy's future between OP-07 and OP-08. [Ref. 59, p. 70]

C. REORGANIZATION

Due to the release of "...From the Sea" in 1992, naval forces were expected to be an integral part of the military's effort to directly control events ashore. The Navy was no longer to think in terms of coordinating naval operations in one part of the world, with ground force operations in another part. "...From the Sea" required the Navy to think in terms of integrated operations with the other military services in the same region. [Ref. 59, p. 69]

In 1992, the CNO, Admiral F.B. Kelso was unable to build a consensus among the OPNAV staff on the future size and structure of the post-Cold War Navy. Admiral Kelso

decided the staff needed to be reorganized to realize new modes of staff interaction and naval concepts. The staff reorganization was announced in August and implemented by October. [Ref. 59, p. 70] The new OPNAV Staff organization is illustrated in Figure 4.2.

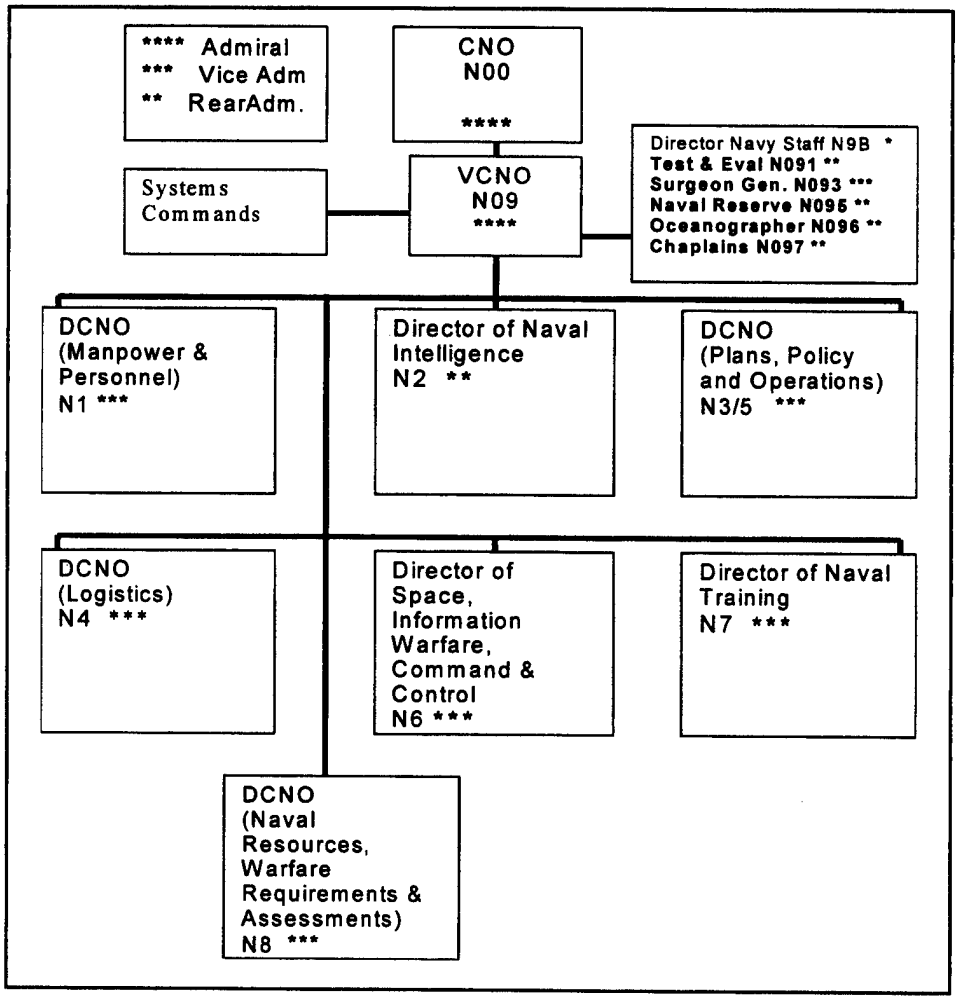


Figure 4.2: 1992 OPNAV Staff.

The reorganization served two restructuring purposes. The DoD's Base Force concept was officially adopted with the 1992 National Military Strategy, necessitating a 13 percent reduction in Navy active duty strength by the end of 1997 [Ref. 60, p. 44]. As part of that reduction, the OPNAV reorganization removed some of the 34 flag billets required to be eliminated by the Navy [Ref. 61, p. 122]. The new organization also made the structure and functions of OPNAV congruent with their Joint Staff counterparts, reflecting the new emphasis on joint operations in the littoral. [Ref. 62]

The reorganization created a new office, the Deputy Chief of Staff for Resources, Warfare Requirements, and Assessments (N8). The new N8 organization was designed to ensure the review of naval capabilities in a joint context. The reorganization was undertaken to eliminate barriers between individual naval warfare communities and other services. [Ref. 62]

Several programming functions that had been divided among separate staff offices were consolidated under the new N8. The new office maintained the programming and budgeting responsibilities of its predecessor, OP-08, but also assumed the warfare appraisal functions of OP-07. The

tension between the competing views on naval warfare by OP-07 and OP-08 were now combined into one central office. [Ref. 59, p. 70] Figure 4.3 contains the new N8 organization.

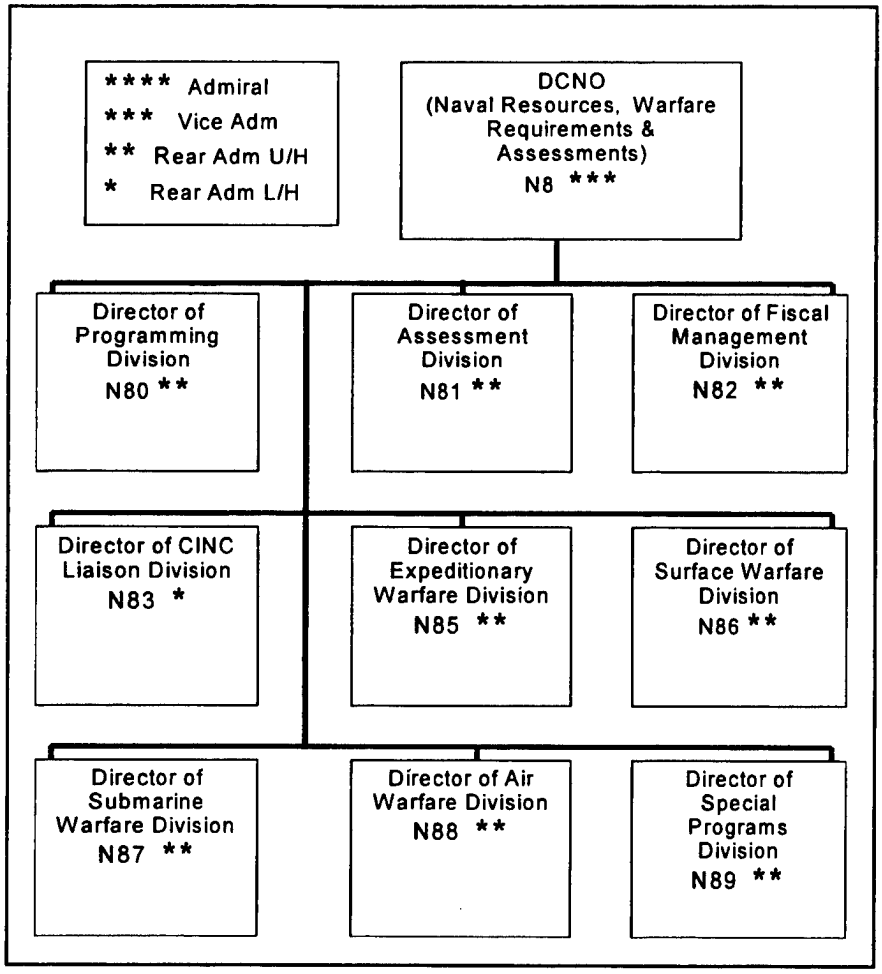


Figure 4.3: N8 Organization.

The reorganization downgraded the "platform barons" (OP-02, OP-03, and OP-05) from vice admiral to rear admiral positions and subordinated their offices to N8 control. No longer did they work directly for the Vice CNO. The absorption of the air, surface, and submarine "navies" sought to alleviate their disruptive competition. In announcing the reorganization, Secretary O'Keefe stated:

> One of my primary concerns is ending rivalries and jealousies between the various key warfare fighting communities in the Navy . . . We believe there can be no jealousy among the fingers of a strong fist. This Navy reorganization will begin the process of bringing our warfare fighters together into a lighter, stronger fist. [Ref. 61, p. 122]

New offices were added and placed under the direction of N8. The CINC Liaison Division (N83) was created for the specific purpose of informing the fleet CINCs about developments in the requirements and resources process and representing CINC views. Another office, Expeditionary Warfare Division (N85), was established and headed by a Marine Corps major general. N85 was to help forge a closer planning link between the Navy and Marine Corps and to focus on the implications of littoral warfare.

D. PPBS PRIOR TO THE REORGANIZATION

The Planning, Programming, and Budgeting System (PPBS) is designed to assist the Secretary of Defense (SECDEF) in making choices about the allocation of resources among a number of competing or possible programs and alternatives to accomplish specific objectives in our national defense [Ref. 63, p. C-2]. Through the programming portion of PPBS, the OPNAV Staff assists the CNO in recommending

decisions to the Secretary of the Navy (SECNAV) about resource allocation.

1. Program Appraisal

In PPBS, programming is the process by which information from the Defense Planning Guidance (DPG) is translated into a financial plan. During programming, resources are allocated within DoN based on warfare area assessments, consensus of DoN high level personnel, and guidance by plans and policy decisions. [Ref. 64, p. 38]

Program appraisal starts in the odd year of a two year POM process. Program appraisal primarily serves to appraise warfare and support programs, and to assess the state of the Navy. Figure 4.4 summarizes the program appraisal process before the OPNAV reorganization. [Ref. 64, p. 43]

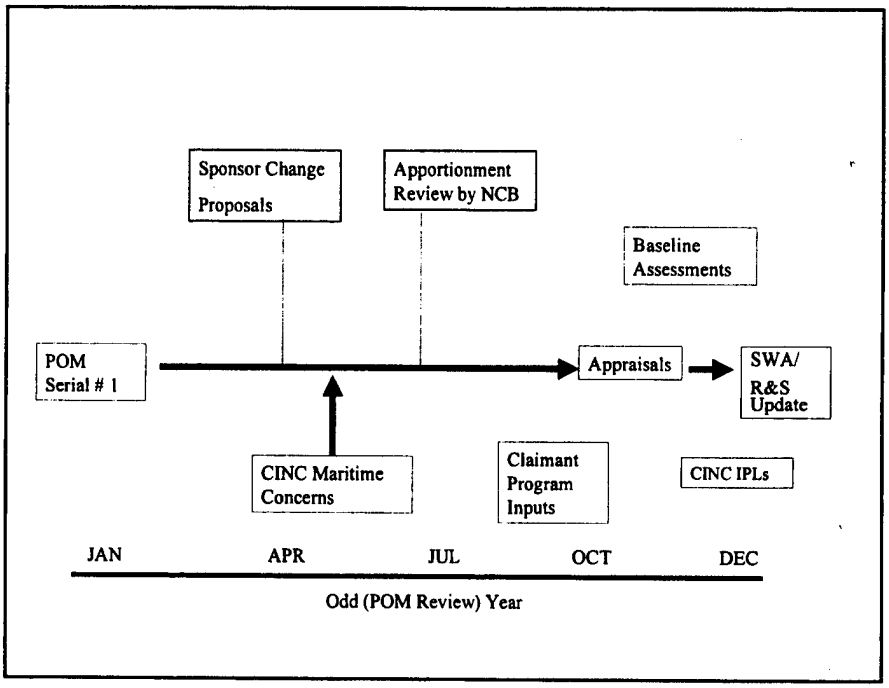


Figure 4.4: Program Appraisal Prior to the OPNAV Reorganization. Ref. 64, Figure 4.

Before the reorganization, the Programming Division (OP-80) began the programming process with the issuance of POM Serial One to all offices participating in the development of the POM. POM Serials were issued throughout the programming phase as situations changed.

The program appraisal process received inputs from various sources. During the first year, inputs were submitted by the unified commanders (CINCs) as Maritime Concerns, by resource sponsors (OP-02, OP-03, OP-05, etc.) as Sponsor Change Proposals (SCPs), and by the Navy Comptroller (NAVCOMPT) as an Apportionment Review.

Starting in the late summer, appraisals were performed to give an overview of the current defense plan [Ref. 65, p. 1]. Appraisals ranged from a review of the Navy maritime strategy and warfighting capabilities to the condition of the Navy shore establishment. There were four broad appraisal areas, maritime strategy, functional area, naval warfare, and baseline area. [Ref. 64, p. 45] Table 4.1 lists the appraisals and the responsible organizations.

Table 4.1: Appraisals and Responsible Offices. Ref. 65.

Appraisal	**OPNAV Office**
Maritime Strategy	OP-06
Functional Area	OP-01, OP-098, OP-81
Naval Warfare	OP-07 with input from OP-02, OP-03, and OP-05, OP-094
Baseline Area	Determined by the subject area

The maritime strategy appraisal evaluated the broad naval strategy on which the subsequent functional area and naval warfare appraisals were based. This appraisal was conducted by the DCNO for Plans, Policy, and Operations (OP-06) and was designed to provide the Navy programming

offices with the underlying naval strategy and its objectives. [Ref. 64, p. 38]

The functional area appraisals addressed the current status of resources in broad support areas, such as manpower, personnel and training, RDT&E, and medical. These appraisals were based on the program and budget levels contained in the previous year Navy budget submission. [Ref. 64, p. 46]

Naval warfare appraisals evaluated the balance of Navy warfighting capabilities, risk, and affordability in the context of the National Military Strategy [Ref. 65, p. 2]. They covered the full spectrum of naval warfare, such as anti-submarine warfare (ASW), strike/anti-surface warfare (ASUW), amphibious and chemical warfare. Each of these warfare areas was addressed in terms of its operational and technological status. At the conclusion of the warfare appraisals, OP-07 generated the Summary Warfare/Readiness and Sustainability Appraisal, summarizing major themes from the individual categories and also evaluating the overall status of naval warfare. [Ref. 64, p. 47]

The baseline area appraisals were special assessments selected by the CNO. These special assessments were to provide an in-depth review of selected areas, such as

special warfare or space programs for a certain year. [Ref. 64, p. 47]

During the appraisal process, additional inputs were submitted by different organizations. Claimants could submit prioritized lists of issues for consideration in the programming process. Also, OP-80 provided Baseline Assessment Memorandums (BAMs) to resource sponsors, indicating the costs for projected force levels. The CINCs submitted Integrated Priority Lists (IPLs) during the appraisal process. These were lists with a maximum 25 CINC issues for the POM ranked by priority. Their concerns were to be answered in the POM and resource sponsors had to identify actions taken on each CINC issue. [Ref. 64, p. 48]

2. POM Development Process

At the end of the appraisal process, POM development started with the publication of the Defense Planning Guidance (DPG) from the Secretary of Defense. Figure 4.5 illustrates the POM development process prior to the OPNAV reorganization. From the DPG, the DoN Consolidated Planning and Programming Guidance (DNCPPG) was developed to give guidance on policy and high interest items to resource sponsors and the Marine Corps. [Ref. 64, p. 49]

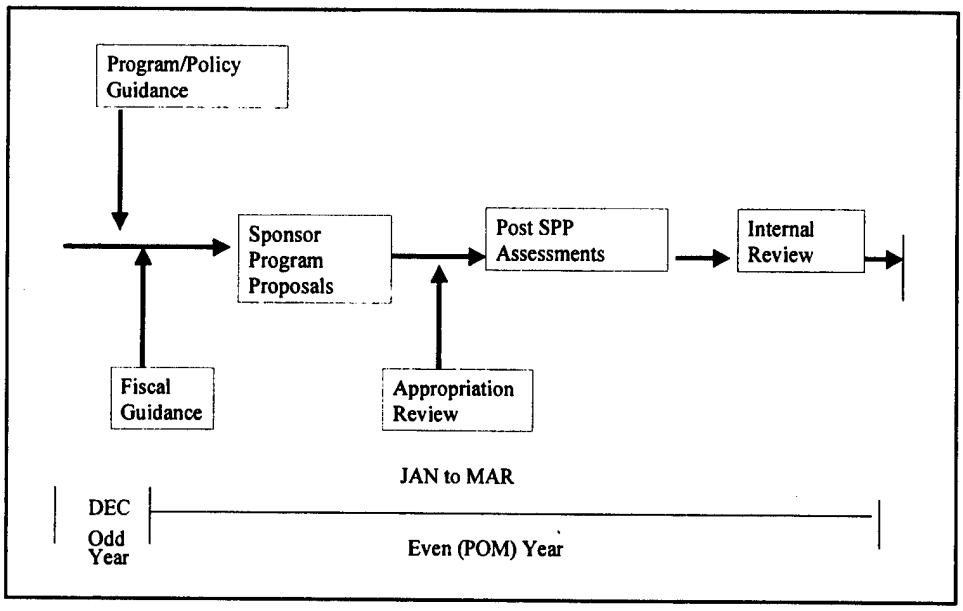


Figure 4.5: POM Development Prior to the OPNAV Reorganization. Ref. 64, Figure 5.

DoD gave fiscal guidance with the allocation of "topline" funding to the services and agencies. DoN then suballocated the funds into blue/green money for the Navy and Marine Corp respectively. The Navy's share was then further allocated among resource sponsors.

Resource sponsors submitted Sponsor Program Proposals (SPPs) to represent their major proposals for the POM. The proposals were updated with the latest BAM, program and policy guidance, fiscal and manpower controls, and pricing changes. Each sponsor presented its SPP to the Program Development Review Committee (PDRC). The PDRC was chaired

by OP-80 and staffed by representatives from each DCNO, ACNO, and major staff offices of OPNAV. [Ref. 64, p. 50]

An Appropriation Review was conducted as part of POM development. The review examined resource allocation by appropriation and established supervisory control by individual appropriations. [Ref. 64, p. 52]

Following the SPPs, designated resource sponsors prepared post SPP assessments, evaluating their programs as proposed by the SPPs and indicating their compliance to published guidance. These reports provided input to the internal review or "end game" decisions for the POM.

At the end of the POM development phase, an internal review was conducted. The PDRC presented the staff versions of the SPPs with recommendations from OP-07 and OP-08 to the CNO Executive Board (CEB). The recommendations by OP-07 and OP-08 often conflicted due to the different offices striving for balance and coherence across all of the SPPs. From the results of the CEB, the tentative Navy POM was published and delivered to the Secretary of the Navy for review and final decisions.

E. JMA/SA ASSESSMENT PROCESS

The 1992 OPNAV reorganization was necessary to implement the Navy's new "...From the Sea" strategy. The Navy felt it was also necessary to incorporate new standards and criteria for determining program priorities. A new programming vocabulary and decision making process was initiated in 1992. [Ref. 59, p. 71] The new program planning changed the warfare appraisal and flag level review process.

1. JMA/SA

The naval warfare appraisal process was replaced with joint mission and support area (JMA/SA) assessments. These new assessments were structured through a matrix in which all program advocates were required to justify their programs in terms of their contribution to the listed mission areas. Discussions in each mission area sought to rank the applicable programs within the mission area, and through further discussion, within the Investment Balance Review (IBR). The IBR was an overall ranking of the entire range of Navy programs. [Ref. 59, p. 71]

The new matrix organization was designed to end the vertical flow, or "stove piping," of information during the

warfare appraisal process. The matrix encouraged the horizontal flow of information and rewarded awareness of competing programs. Program advocates had to work with other program advocates to prioritize programs in each mission area. If an advocate was successful in getting the program ranked high in a particular mission area, the probability that it would be fully funded during the IBR increased. [Ref. 59, p. 71]

The titles of the mission areas were chosen to introduce a joint and broad perspective to Navy programming. The new categories required advocates to demonstrate the value of their programs in terms of their potential contributions to joint military warfare. Success in programming depended on a program's contribution to the operational effectiveness of another service, as well as naval forces. [Ref. 59, p. 71]

Since inception of the joint mission and support area concept, the titles and number of categories have varied over the years. Figure 4.6 illustrates the joint mission and support area assessment teams for 1998.

The assessment teams were chaired by Navy flag or Marine Corps general officers and consisted of a "horizontal cut" of senior officers from across OPNAV. The

teams used seminars and wargames to examine and discuss warfare requirements, emerging issues, and programmatic alternatives. The teams drew on input from the Defense Science Board, Naval Research Advisory Committee, naval warfare centers, Center for Naval Analyses, university research laboratories and contractors. [Ref. 62]

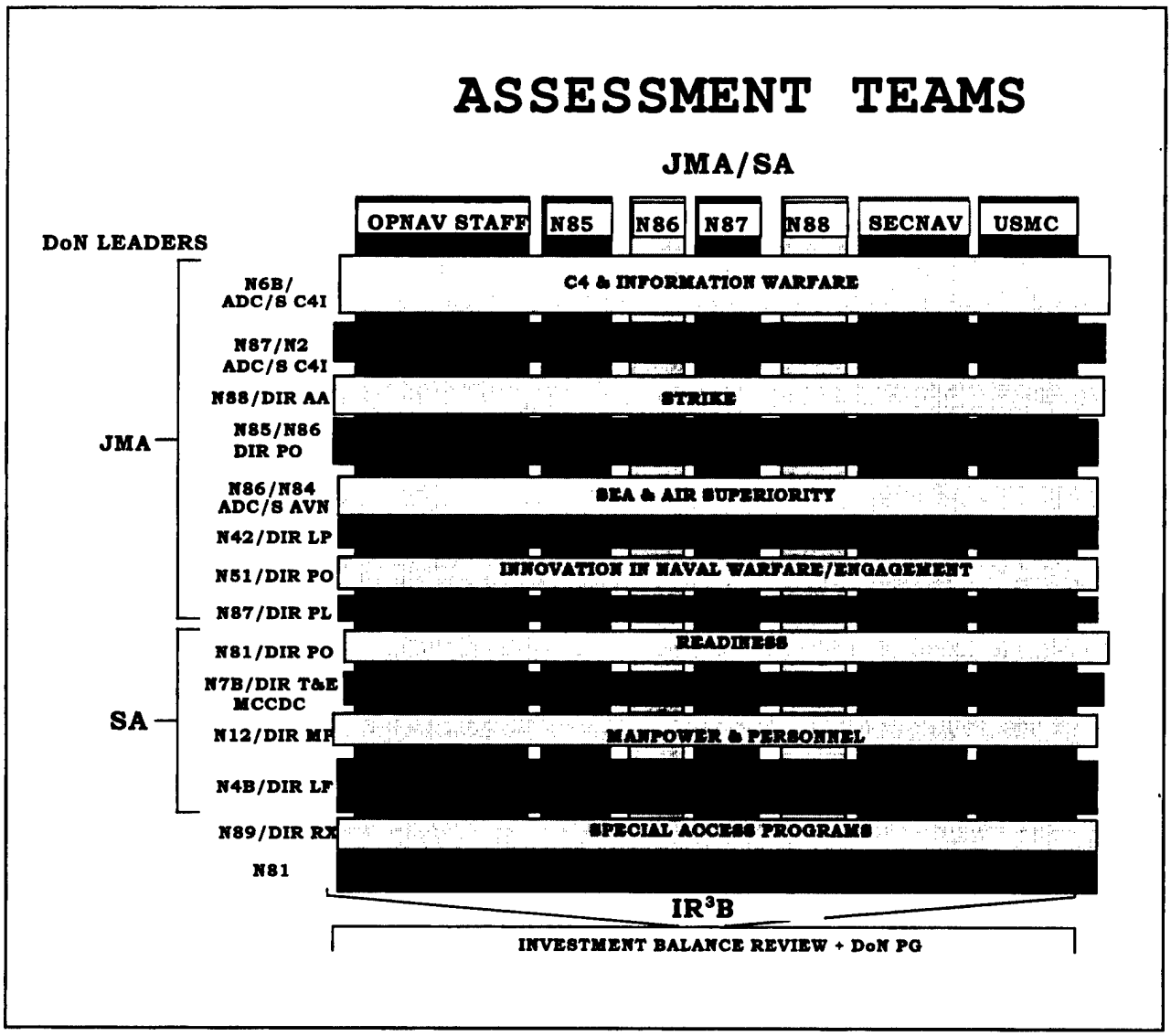


Figure 4.6: 1998 Joint Mission and Support Area Assessment. Ref. 24

2. New POM Development Process

The JMA/SA assessments were integrated into a new program planning process. Figures 4.7 and 4.8 illustrate the new program planning process.

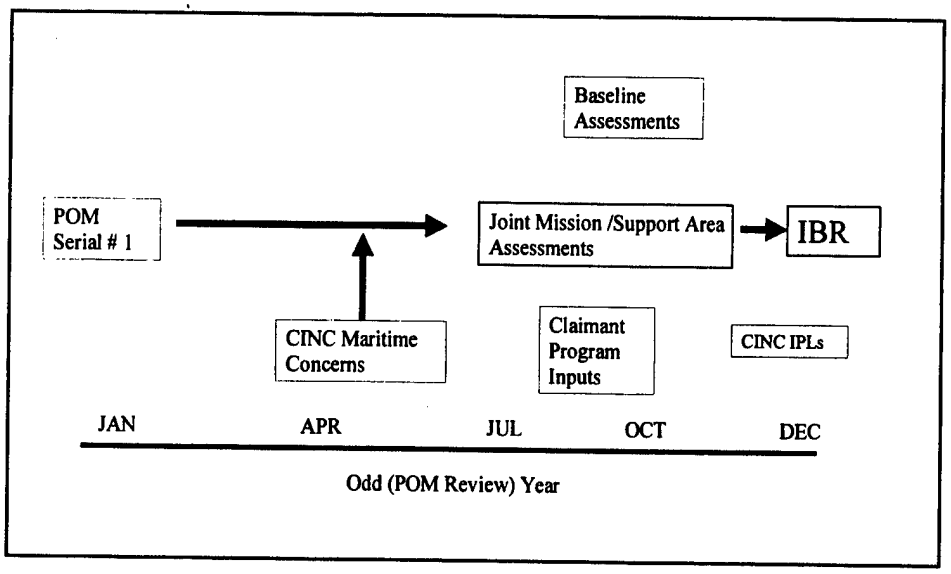


Figure 4.7: Odd Year Program Planning.

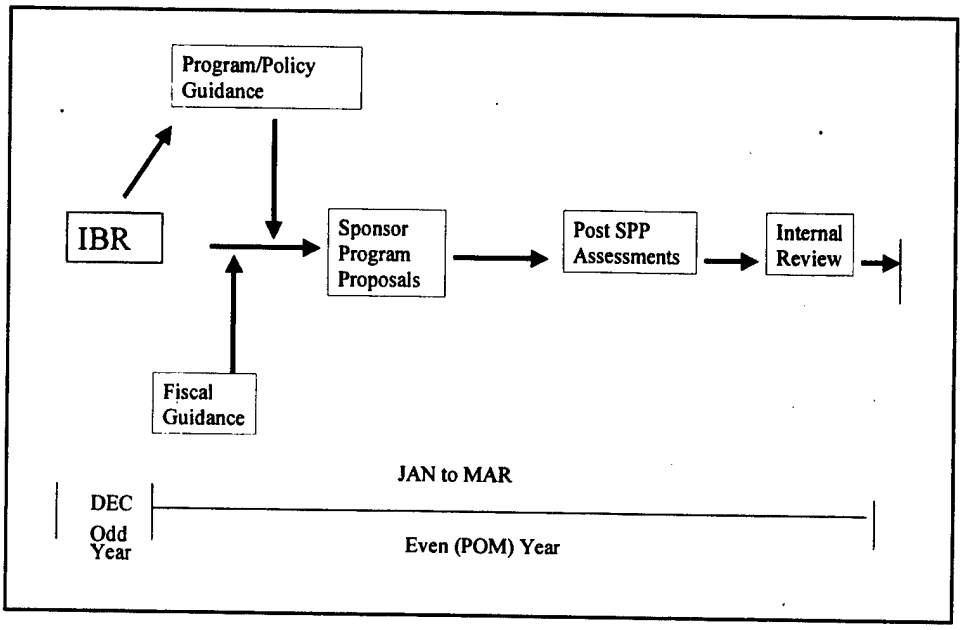


Figure 4.8: Even Year Program Planning.

The new Navy POM process was designed to review naval capabilities in a joint context using the Integrated Requirements, Resources, and Review Board the (IR^3B). This group represented a new concept in resource allocation. Table 4.2 contains the membership for the IR^3B.

Table 4.2: IR^3B Membership. Ref. 63, p. C-7.

Chairman

N8 DCNO, Resources, Warfare Requirements, and Assessments

Members

N80	Programming	N1B Manpower/Personnel
N81	Assessment	N2B Intelligence
N82	Fiscal	N4B Logistics
N83	Special Programs	N6B Space Systems
N84	RDT&E	N096 Oceanographer
N85	C3 Systems	Systems Commands
N86	Surface	Center for Naval
N87	Subsurface	Analyses
N88	Air	

The IR^3B received assessments by each joint mission and support area category. The assessment results were combined into one complete Navy investment strategy, the Investment Balance Review.

During the even year of programming, the IBR was used to establish policy and guidance for POM development. Similar to the old process, POM development received fiscal guidance from SECNAV and SPPs from resource sponsors. The SPPs were evaluated and presented at the post SPP assessment for the "end game" review.

During the internal review, the IR^3B briefed the Executive Steering Committee (ESC), chaired by the CNO. At this review, the CNO was presented with staff versions of the SPPs and recommendations from the overall POM reviewers. The tentative POM was then formulated for delivery to SECNAV. [Ref. 63, p. C-10]

F. FY 1994 BUDGET

The OPNAV reorganization and program planning shift were seen as a significant changes for the Navy. The fiscal year 1994 Navy budget was the first in a series of budgets that shifted naval operations from deep-water blue to littoral green. A Senate Armed Services Committee staff member commented on the fiscal year 1994 hearings, saying:

> The Navy finally seemed to have its act together on how it fit into the broader scheme of things. Just two years ago, it looked like they were still trying to do the same things they'd done (during

the Cold War), just a little less. [Ref. 66, p. 167]

Except for a few changes, legislators embraced the Navy's new budget vision. For years, Congress had wanted to see steep declines in defense spending in support of deficit reduction. They also wanted a logical refocusing of forces and equipment from global war with the Soviets to the regional threats emerging from the coastlines. The Navy finally adapted in 1993 and the fiscal year 1994 Navy budget was sold to Congress on the basis of joint mission areas, as opposed to platforms. [Ref. 66, p. 167]

G. SURFACE COMBATANTS

The OPNAV reorganization and program planning changes affected surface combatants. The head of surface warfare was downgraded from a vice admiral to a rear admiral position. The highest ranking advocates for surface warfare were the commanders (vice admirals) of Surface Forces Atlantic and Pacific (SURFLANT and SURFPAC) [Ref. 67].

In addition, the Surface Warfare Division now worked for N8 rather than the Vice CNO. The N8 organization was designed to eliminate competition between the warfare

communities and build a consensus on overall required naval capabilities. Surface warfare needed to work together with the air and undersea communities for a joint vision.

The shift to joint mission area assessments changed the appraisal process for surface combatant programs. Prior to the shift, surface combatants were evaluated by traditional naval warfare capabilities, such as anti-surface, anti-submarine, and anti-air warfare. The revised appraisals required surface combatants to be evaluated in new mission areas, such as sea and air superiority, joint strike, and littoral warfare.

This shift required changes to surface combatant planning [Ref. 67]. Surface combatants had been justified under the old appraisal process, directed towards countering the Soviet naval threat. To improve carrier battle group capabilities, expensive nuclear propulsion plants were introduced to surface combatants beginning in the 1960s. In the 1980s, the Navy introduced the Aegis combat system and experienced a massive build-up of the entire fleet. Now in the 1990s, the Navy needed to defend its costly force under new assessment criteria.

1. Nuclear-Powered Combatants

In 1974, Congress passed U.S. Code Title III, directing all future surface combatants to be nuclear powered for operations with carrier battle groups [Ref. 68, p. 110]. A surface combatant needed to have the same speed and distance capabilities to successfully escort a nuclear-powered aircraft carrier. The Virginia and California-class cruisers were built to be nuclear escorts. These cruisers were to provide defense to the carriers against the Soviet naval and air threat in open-ocean conflicts.

With the shift in mission focus and new budgetary restraints in the 1990s, the cruisers needed their expense to be justified differently, especially with the operationally cheaper and more capable Ticonderoga-class cruisers. The two classes of ships were scheduled for costly engineering and combat system upgrades lasting through 1995. In the end, all nuclear-powered cruisers were decommissioned by 1998 due to expense and limited mission capabilities [Ref. 31, p. 4].

2. Non-Aegis Combatants

Spruance-class destroyers and Oliver Hazard Perry-class frigates are non-Aegis combatants that were designed

for narrowly defined Cold War missions. Their limited capabilities were not easily translated to the new mission area assessments.

The Spruance-class destroyer was originally built in the 1970s as a specialized anti-submarine ship with only limited air defense capabilities. In the 1980s, the Spruance-class destroyers were upgraded with Harpoon and Tomahawk cruise missiles, providing the ship with anti-ship and strike capabilities. [Ref. 68, p. 151]

In consideration of the new joint mission areas, Spruance-class destroyers make a small contribution to the Navy's littoral role. Their Tomahawk cruise missiles were the main asset for the littoral environment. Due to their inferior air capabilities, the Spruances could not contribute to theater missile defense. The Spruances' 5-inch/54-caliber guns were deemed inadequate for littoral support.

The Oliver Hazard Perry-class frigates were also limited in littoral capabilities. These frigates constituted the "low" end of the 1970s surface combatant design strategy of "high/low" mix. These cheaper escorts with reduced capabilities were designed to offset the more costly Spruance and Ticonderoga classes, the "high" end of

the mix. [Ref. 69, p. 84] Their mission was to provide limited defense to amphibious and underway replenishment groups and convoys crossing the open ocean.

After the Cold War, the frigates' limited capabilities had to be translated into new missions to justify their existence. The Oliver Hazard Perry-class frigates have no land attack or theater missile defense capabilities [Ref. 70]. As of 1998, almost half of the class had been either decommissioned or placed in the Naval Reserve Force. The remaining frigates have been retained in the fleet, partly due to their relatively low operating costs and the need to maintain 116 surface combatants in accordance with the Quadrennial Defense Review [Ref. 71].

3. Aegis Combatants

The Ticonderoga and Arleigh Burke-class Aegis combatants are multi-mission ships, intended to protect carrier battle groups in the event of global war. Each class of ship was designed with the Aegis combat system, the most advanced warfare system in the world. The Aegis combat system was superb in the traditional naval warfare roles of ASW, AAW, and ASUW.

The shift in mission assessments required N86 to find new justifications for these expensive Cold War designed combatants. In the early 1990s, all the Ticonderoga-class cruisers had already been purchased, but the Arleigh Burke program had just begun. N86 needed to translate the Arleigh Burkes' $235 million dollar (FY97) Aegis combat system into new mission areas to justify program continuation. The Surface Warfare Division has invested heavily in programs upgrading the Aegis combat system for the littoral environment as discussed in chapter III.

H. THE NEW ASSESSMENT PROCESS

In July 1998, the CNO approved a new assessment process, replacing the JMA/SAs, called Integrated Warfare Architectures (IWARs). The new assessments focus on capabilities rather than platforms for programming. The Navy felt that the JMA/SA assessment process had become too rigid due to resource sponsors leading the JMA/SA teams. The resource sponsors had failed to make the link between platforms and capabilities. [Ref. 72]

The IWARS will direct assessments in five different areas of naval warfare -- power projection, air dominance, maritime dominance, deterrence, and information

superiority. Different missions and weapon systems will comprise each of the five architectures. This is intended to enable naval leadership to understand the contributions of various systems to overall naval capabilities. [Ref. 73, p. 40] In addition, the IWAR structure is designed to match the Joint Warfare Capabilities Assessments (JWCA) performed by the Joint Staff. Figures 4.9 and 4.10 illustrate the IWARs structure and its compatibility to the JWCA.

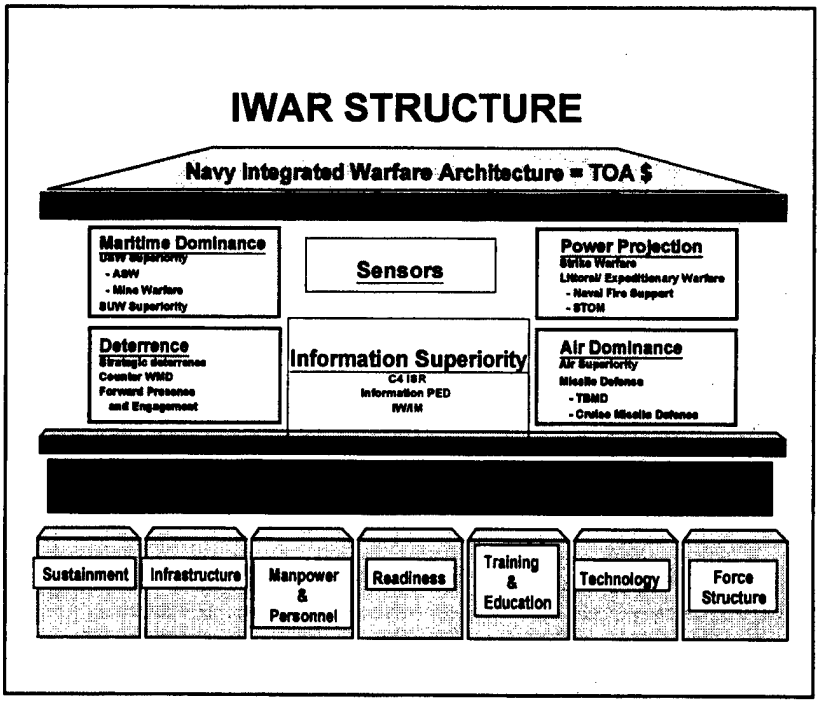


Figure 4.9: IWAR Structure. Ref. 74.

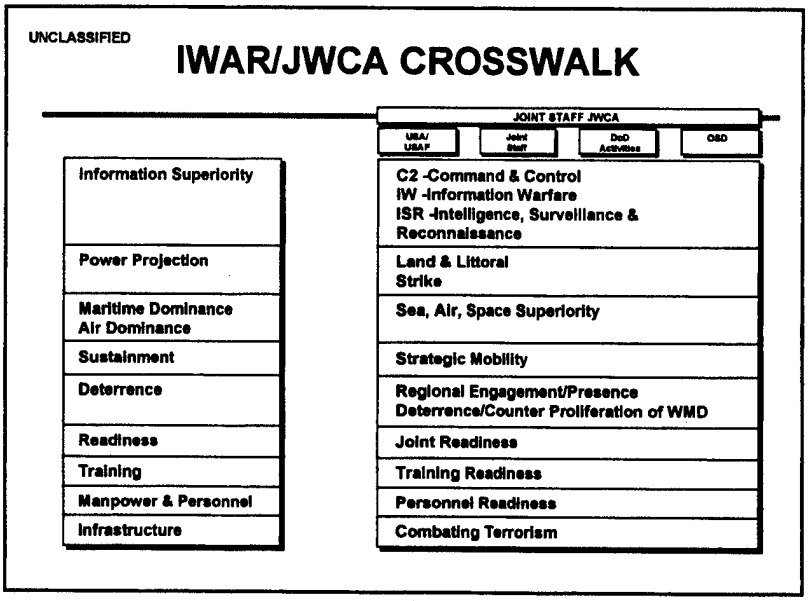
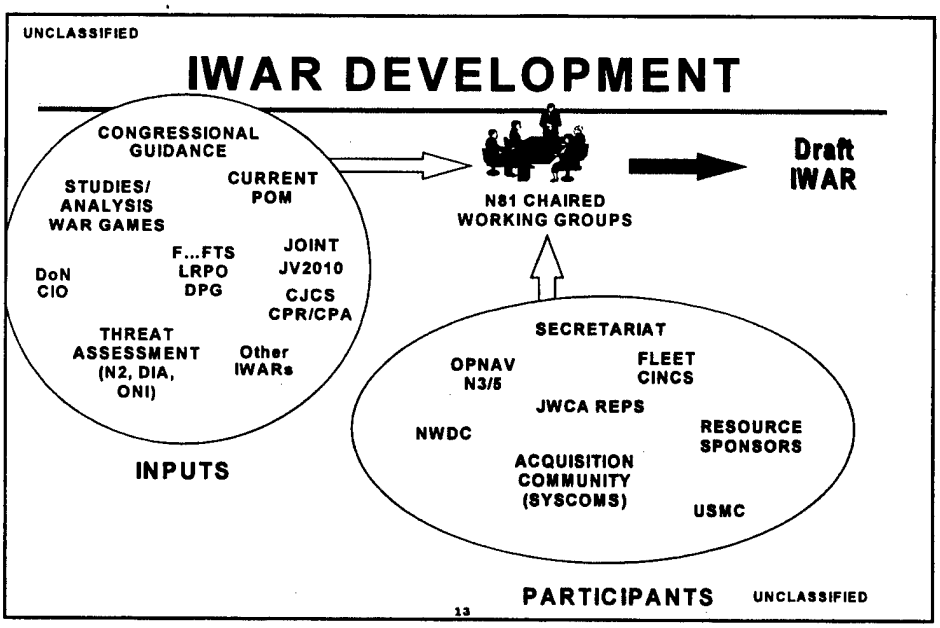


Figure 4.10: IWAR and JWCA Comparison. Ref. 74.

Under the new assessments, N81 will chair the IWAR working groups. Each IWAR will be constrained by its Total Obligational Authority (TOA). N81 will ensure each IWAR working group remains within 100 percent of TOA coverage. Figures 4.11 and 4.12 illustrate the working groups and TOA constraints. [Ref. 74]



NWDC - Naval Warfare Doctrine Command
JWCA - Joint Warfighting Capabilities Assessment
DIA - Defense Intelligence Agency
ONI - Office of Naval Intelligence
LRPO - Long-Range Planning Objectives
F...FTS - Forward...From the Sea
CJCS - Chairman Joint Chiefs of Staff
CIO - Chief Information Officer

Figure 4.11: IWAR Working Groups. Ref. 74.

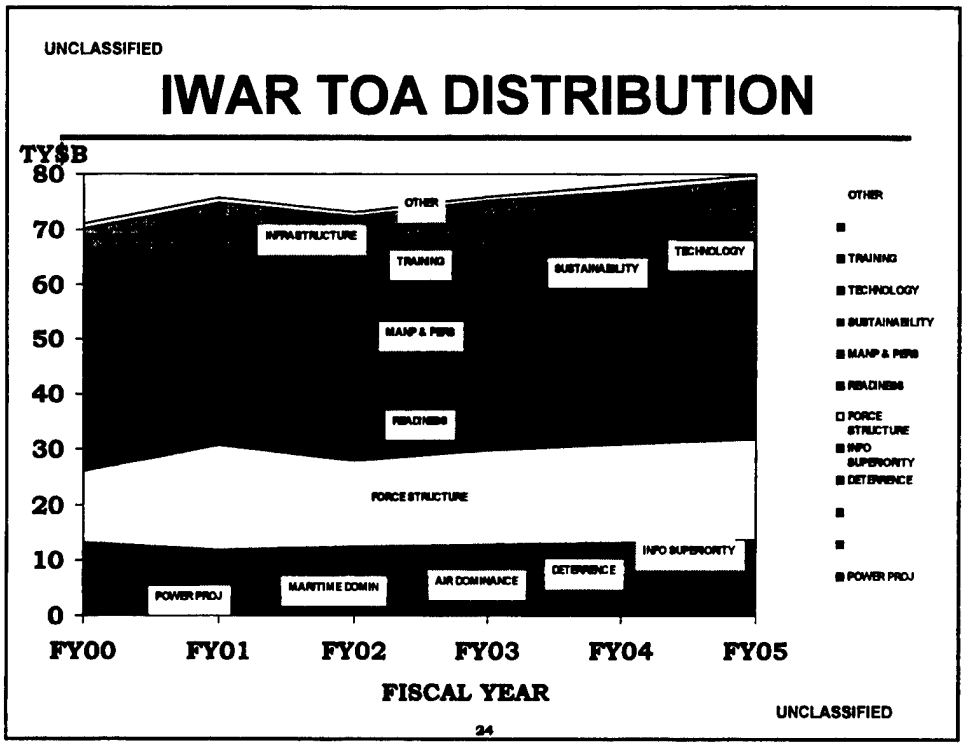


Figure 4.12: IWAR TOA Distribution. Ref. 74.

At the end of the IWAR review, the CNO will be briefed on issues from the assessments. The CNO will then publish the CNO Program Analysis Memorandum (CPAM). The CPAM will summarize the IWARs, describe their impact on naval warfare capabilities, and recommend alternatives. The CPAM will replace the Investment Balance Review within the programming process. [Ref. 73, p. 40]

The IWAR assessment process was utilized for the fiscal year 2001 POM review. The process is still under development and is expected to be fully operational for POM 2002. [Ref. 72]

For surface combatants, the IWAR process may alter the future shipbuilding plan. The Arleigh Burke-class destroyer program should not be affected due to its multi-year procurement strategy. However, the DD-21 program is expected to start in 2004 and will have to compete for the limited TOA funding with the next generation carrier (CVNX), submarine (NSSN), and amphibious (LPD-17) ships.

I. SUMMARY

"...From the Sea" established a new post-Cold War direction for the Navy, i.e., joint littoral warfare. Admiral Kelso initiated the OPNAV staff reorganization to reduce the competition between the warfare communities and to increase participation by the CINCs and Marine Corps. In addition, the appraisals for the program planning process were shifted to joint mission and support area assessments. A new board, the IR^3B, was established to promote consensus in the programming process.

Surface combatant planning was affected by the OPNAV and programming changes. The Surface Warfare Division, along with the other warfare divisions, was downgraded and transferred to N8's direction. Surface warfare lost some of its autonomy in program planning.

The new joint mission area assessments changed the way surface combatants were evaluated. Surface combatant programs needed to be justified in accordance with new mission areas to be funded in the POM.

For future programming, the new IWAR process began in 1998. The shift to capability assessments and 100 percent TOA coverage may have dramatic effects on the DD-21 program in the coming fiscal years.

V. DEFENSE REVIEWS

A. INTRODUCTION

Due to Soviet troop withdrawals from Eastern Europe in 1989 and political reform in the Soviet Union in 1991, the U.S. military lost its 40-year-old Cold War adversary. Absent this adversary, and the related threat of global war, Congress questioned the level of Defense spending. The persistence of the deficit reinforced these concerns. From 1989 through 1997, DoD conducted an almost continuous assessment of force structure and strategy for the post-Cold War environment. This chapter explains the three major Defense assessments of this era.

The National Defense Panel, an independent, non-partisan group, critiqued the last review, the Quadrennial Defense Review (QDR). Their report and the fiscal year 1999 Defense budget, the latest budget since the QDR, are also explained in this chapter.

Finally, the effects of these reviews on the entire fleet and surface combatants in particular are discussed.

B. BASE FORCE

In March 1989, the Joint Staff acknowledged the reduced risk of a deliberate Soviet attack on Western Europe and the increased risk of non-Soviet threats in the Third World. They also emphasized the need to change strategic planning from global war to regional contingencies. [Ref. 60, p. 3]

In September 1989, Chairman of the Joint Chiefs of Staff (CJCS) Admiral William J. Crowe signed a new National Military Strategy (NMS), replacing the concept of forward defense to forward presence due to the withdrawal of Soviet troops from Eastern Europe and the increased probability of regional contingencies. Instead of large forward-stationed forces, the NMS asserted the need for smaller overseas forces and increased periodic deployments. [Ref. 60, p. 3]

General Colin L. Powell became the CJCS in October 1989. General Powell brought to the Joint Staff a new strategic vision for the U.S. military. Due to the changes in the Soviet military defense posture and budgetary pressures from Congress for a "peace dividend," the new chairman believed the U.S. military needed to initiate significant force reductions. He felt that if DoD did not

commence the process, Congress would dictate deep cuts and possibly create a "hollow force," similar to the post-Vietnam drawdown in the 1970s. [Ref. 60] For this new environment, CJCS General Powell regarded his principal challenge as the reshaping of the military.

The force structure that the Joint Staff and General Powell developed was called the Base Force. The term "Base Force" was used to assert the minimum force feasible to respond to U.S. interests. General Powell felt that any number below the Base Force would endanger U.S capabilities to reconstitute in the event of a reemergent Soviet threat.

Using the authority granted to his position by the Goldwater-Nichols Act of 1986,[1] General Powell submitted the Base Force plan to SECDEF and the President, circumventing the services' POM process [Ref. 60]. The administration adopted the Base Force plan in June 1990 and later established the DPG in accordance with the plan. The Base Force was organized into four packages. These packages were not meant to be a blueprint for a new command structure, but a planning tool for sizing the military. Table 5.1 lists the four packages.

Table 5.1: Base Force Packages. Ref. 75.

Packages	Army Divisions	Air Force Wings	MEF*	Carriers**
Atlantic	13	16	2	6
Pacific	2	3.5	1	6
Contingency	5	7	1	0
Total	**20**	**26.5**	**4**	**12**
	ICBMs*	**SLBMs***		**Bombers**
Strategic	500	432		99

* MEF - Marine Expeditionary Force, ICBM - Intercontinental Ballistic Missile, SLBM - Submarine Launched Ballistic Missile.
** The Navy would be reduced to 435 ships, including 143 surface combatants.

Active duty personnel were to be reduced to 1,626,000, a 25 percent drop from the 1987 peak. Table 5.2 lists the Base Force active duty end strength goals.

[1] The 1986 Goldwater-Nichols Department of Defense Reorganization Act made the Chairman, rather than the Joint Chiefs of Staff, the principal military adviser to the President and SECDEF.

Table 5.2: Base Force Active Duty End Strength. Ref. 75.

Service	1990	1997
Army	750,600	536,000*
Air Force	539,300	430,000
Navy	582,900	501,000
Marine Corps	196,700	159,000

* Required by 1995.

General Powell asserted that the Base Force was structured with anticipated changes in the international environment. The Base Force was grounded on four assumptions about the future [Ref. 75, p. 3]:

- The U.S. would see continued arms reductions and democratic progress in the Soviet Union and Eastern Europe.
- Security ties among democratic states would continue.
- Regional tensions, heightened by weapons proliferation, would continue in areas of great concern to the U.S.
- The U.S. would not have to undertake any significant commitment of forward-deployed forces.

The Base Force was designed to employ decisive power in a major regional conflict (MRC) in one part of the world and still have sufficient forces for a second regional conflict. [Ref. 76] The Base Force was the start of military force structuring to win two MRCs.

The Base Force received criticism due to its two MRC concept and assumptions. In a 1993 report, the General Accounting Office (GAO) questioned the nature of the two MRCs. Neither the scope, detail, nor locations were specified in the 1992 NMS. Also, two of the four assumptions for the Base Force were challenged due to the aborted Soviet coup and Operation Desert Storm in 1990 and 1991. [Ref. 75] With these criticisms and a new administration in 1993, the Base Force was shelved and the military force structure was reappraised in 1993.

C. BOTTOM-UP REVIEW

Presidential candidate Bill Clinton campaigned in the fall of 1992 to cut Defense spending by an additional $60 billion over five years from President Bush's plan. Upon assuming the presidency, he increased the cuts to $104 billion from the 1995 to 1999 Future Years Defense Program (FYDP). [Ref. 77]

In March 1993, the new Secretary of Defense Les Aspin initiated a reassessment of U.S. Defense requirements in a report called the Bottom-Up Review (BUR). The review was completed in seven months, within time for the fiscal year 1995 budget and FYDP. [Ref. 78, p. 16]

The BUR outlined four new dangers facing U.S. interests in the post-Cold War environment [Ref. 78, p. 16]:

- Proliferation of nuclear weapons and other weapons of mass destruction
- Threat of large-scale aggression by major regional powers with opposing interests
- Failure of democracy and reform in the former Soviet Union, Eastern Europe, and elsewhere
- Economic dangers to national security

The BUR asserted that regional aggression was the primary threat to U.S. interests. The report specified three strategies to counter this danger [Ref. 78, p. 17]:

- Defeat aggressors in major regional conflicts.
- Maintain a presence overseas to deter conflicts and provide regional stability.

- Conduct smaller-scale intervention operations, such as peacekeeping, humanitarian assistance, and disaster relief.

Similar to the Base Force, the BUR justified a force structure sufficient to fight and win two major regional conflicts that occurred nearly simultaneously. Using the two MRC strategy, the BUR determined the specific forces, capabilities, and improvements required for the military. [Ref. 78, p. 17]

This force structure reduced active duty forces to 1.42 million, a drop from the Base Force's 1.6 million in 1992. DoD believed that a two MRC capable force would deter a second aggressor from attacking neighbors while the U.S. was engaged in another conflict. This force strategy also prepared the U.S. against any future larger-than-expected threat. [Ref. 78, p. 18] Table 5.3 lists the BUR force structure.

Table 5.3: BUR Force Structure. Ref. 78.

Force	Requirement
Army	10 active divisions 15 National Guard combat brigades
Navy	11 active aircraft carriers 1 reserve/training aircraft carrier 45-55 attack submarines 127 surface combatants Total of 346 ships
Marine Corps	3 MEFs
Air Force	13 active fighter wings 7 reserve fighter wings Up to 184 bombers
Strategic nuclear forces	18 ballistic missile submarines Up to 94 B-52H bombers* 20 B-2 bombers* 500 Minuteman III ICBMs

* Included within the Air Force 184 bombers.

Compared to President Clinton's target of $104 billion, Secretary Aspin determined that the BUR force structure would save $91 billion over the 1995 FYDP. Secretary Aspin believed an additional $13 billion would be saved through DoD's base closures, acquisition and strategic reviews, and the Vice President's National Performance Review. [Ref. 79, p. 107]

Upon Congressional request, the General Accounting Office (GAO) conducted a review of the BUR and determined

that U.S. forces would not be able to support two simultaneous MRCs. They doubted the ability of forces to redeploy between two conflicts, the availability of strategic lift and support forces, and the deployability of Army National Guard combat brigades. [Ref. 78, p. 22]

In addition, Congress established the Commission on Roles and Missions of the Armed Forces to determine the appropriateness of roles, missions and funtions of the military. The Commission recommended that DoD conduct a comprehensive strategy and force review at the start of each new administration or every four years. [Ref. 78, p. 16]

D. QUADRENNIAL DEFENSE REVIEW

Responding to the Commission's recommendations, Congress included within the National Defense Authorization Act of 1997 a requirement that two separate defense reviews be conducted in 1997. The reviews were the Quadrennial Defense Review, conducted by DoD, and the National Defense Panel Review, conducted by an independent, nonpartisan panel, comprised of national security experts outside the military.

In May 1997, DoD completed the QDR. DoD asserted that the QDR was a blueprint for a strategy-based, balanced, and affordable plan for defense needs through 2015. The QDR was a comprehensive examination of defense strategy, force modernization plans, infrastructure, budget plans, and active, guard, and reserve forces. The review considered anticipated technologies by 2005 and the changes in doctrine and operational concepts due to the new technology. [Ref. 80, p. 16]

Seven panels comprised of members from OSD, the Joint Staff, CINCs, and the services conducted the review. To assess force structure and strategy, the panels [Ref. 80, p. 3]:

- Conducted an assessment that modeled two major overlapping wars on the Korean Peninsula and in the Arabian Gulf.
- Examined the results of a smaller-scale contingency operations assessment
- Led an assessment of U.S. capabilities to counter a great power in 2014.
- Conducted an overseas presence analysis.

- Reviewed modernization programs to ensure new capabilities supported the CJCS' *Joint Vision 2010.*

From these assessments, the QDR cited a new strategy, consisting of three elements - shape, respond, and prepare [Ref. 81]:

- Shape the strategic environment by deploying forces.
- Respond to a full spectrum of military operations ranging from deterring aggression and conducting concurrent smaller-scale contingency operations to fighting and winning two major regional conflicts.
- Prepare for an uncertain future by responding to new emerging threats, including the potential emergence of a regional great power, by investing in force modernization, exploiting advanced technologies, and reengineering infrastructure and support activities.

To support the shape, respond and prepare strategy, the QDR proposed a force similar to the BUR, but slightly smaller. Table 5.4 lists the force structure for the QDR.

Table 5.4: QDR Force Structure. Ref. 81.

Force	Requirement
Army	10 active divisions 15 National Guard combat brigades
Navy	11 active aircraft carriers 1 reserve/training aircraft carrier 50 attack submarines 116 surface combatants Total of 330 ships
Marine Corps	3 MEFs
Air Force	12 active fighter wings 8 reserve fighter wings 187 bombers
Strategic Nuclear Forces	18 ballistic missile submarines 71 B-52H bombers* 21 B-2 bombers* 500 Minuteman III ICBMs

* Included within the Air Force 187 bombers.

The QDR asserted that the force was shaped to meet demands in the near term and long term strategy [Ref. 81]. The five year funding plan aimed at both preserving current forces and investing in future weapons systems.

The QDR set a procurement funding goal of $60 billion by fiscal year 2001. Secretary of Defense William Cohen believed that Defense budgets would remain relatively flat at $250 billion (FY97 dollars). With no real growth in Defense spending, the Secretary needed to produce savings in the budget in order to boost procurement. The QDR set

an 1.36 million goal for active duty forces, reducing end strength by 60,000 from the BUR level. Full-time civilian employees were to be cut by 80,000. The QDR also recommended two more rounds of base closures in 1999 and 2001. Along with changes to some weapon systems procurement plans, these savings would total over $10 billion for recaptilization programs. [Ref. 82, p. 8]

The GAO examined the 1998 FYDP resulting from the QDR. They determined that this budget was unlikely to be executed as planned. The 1998 FYDP relied on billions of dollars in savings from unspecified management initiatives. The plan also projected no real growth in Defense health care, a program that had increased 73 percent from 1985 to 1996. [Ref. 83, p. 3]

The six year funding for procurement and O&M ran counter to DoD's experience over the last 30 years. Since 1965, O&M funding has increased consistently with growth in procurement funding. Historically, procurement funding rose and fell in correlation to the total Defense budget. Shattering this historical trend, the 1998 FYDP projected procurement funding to rise 29 percent while O&M and total Defense funding remained relatively flat in real growth.

[Ref. 84, p. 9] Table 5.5 lists O&M, procurement, and total Defense TOA from the 1998 FYDP.

Table 5.5: O&M, Procurement, and Total Defense TOA from the 1998 FYDP (Current Dollars). Ref. 11.

Title	FY98	FY99	FY00	FY01	FY02	FY03
O&M	94.2	94.6	95.7	97.7	99.5	101.7
% Real growth	0.0	-1.4	-1.1	-0.1	-0.4	-0.1
Procurement	45.1	48.7	54.1	61.3	60.7	63.5
% Real Growth	2.9	6.2	9.2	11.1	-2.9	2.6
Total Budget	256.8	258.6	264.0	272.3	275.5	285.1
% Real Growth	-1.2	-1.3	-0.1	0.9	-1.1	1.1

In late September 1998, the service chiefs, testifying before the Senate Armed Services Committee, admitted that the 1999 FYDP funding was insufficient and readiness was in danger. The service chiefs said that they needed up to $17 billion more each year to repair and replace aging equipment, and to buy new ships, aircraft, tanks, and other weapons. In an effort to support the 1997 balanced budget agreement, the services had remained silent on the need for more funding. [Ref. 85]

Congress agreed to a $9 billion "emergency" supplement for the fiscal year 1999 Defense budget. The increase was

directed to fund continuing Bosnian operations, year 2000 fixes, drug interdiction operations, theater missile defense, and counter-terrorism activities. Both the Senate and the House refused to submit any legislation authorizing more base closings. [Ref. 86] Base closures were one of the QDR's savings initiatives for increased procurement funding.

As previously reported by the GAO in 1997, the FY99 budget highlighted the problems with the Defense FYDP. O&M was underfunded compared to Defense requirements. With a shortage in O&M resources, unrealistic Defense budgetary savings, and flat growth in Defense funding, there were substantial risks that procurement funding would not reach $60 billion by 2001.

E. NATIONAL DEFENSE PANEL REVIEW

The National Defense Panel examined the QDR and reported in December 1997. The Panel asserted that challenges between 1997 and 2020 would require fundamental changes to national security institutions, military strategy, and defense posture. To fund the transformation, the Panel estimated that the military needed to spend $5 to $10 billion a year. [Ref. 87]

The Panel believed that future mission types would remain largely unchanged but with a different emphasis. According to the Panel, U.S. missions and capabilities for the 2010 to 2020 time frame would include [Ref. 87]:

- Maintaining regional stability through the integration of U.S. diplomatic, economic, and military activities.
- Projecting more shore-based land and air forces to places where the U.S. may not have forward-deployed forces or forward bases.
- Protecting the U.S. against nuclear, chemical, biological, and information warfare.
- Shifting nuclear deterrence to tracking the proliferation of mass destruction weapons.
- Integrating information technology into offensive and defensive capabilities.

For future threats, homeland defense and weapons of mass destruction were emphasized by the panel. The panel believed that terrorists or nations using mass destruction weapons would threaten the coasts and borders of the United States. [Ref. 88]

The Panel also believed that the QDR's two MRC force structuring plan was flawed. The report asserted that the probability of two MRCs was highly unlikely and that it served only to justify the current force. Preparing for the two nearly simultaneously MRCs, the U.S. wasted near-term resources that should be invested for long-term security. The report insisted that procurement programs supported Cold War systems not in accordance with the future capabilities envisioned in *Joint Vision 2010*.

Unlike the QDR, the National Defense Panel Review did not specify force structure. Instead the Panel recommended force capability objectives. The panel asserted that future conventional forces should build [Ref. 87, p. 44]:

- Systems architectures to enable network-based operations
- Defenses for our commercial and military information architectures
- Electronic strike arsenals, e.g., virus insertion and electromagnetic pulse capabilities
- Automated systems
- Smaller and more mobile logistics capabilities

- Improved sea and air lift to employ forces rapidly and with the correct configuration
- Steathy air, sea, and ground forces
- Long-range precision strike weapons

The Panel gave specific examples for actions to transform the military to meet the challenges of the future. The actions that applied to surface combatants were [Ref. 87, p. 46]:

- Provide long-range precision cruise missiles
- Integrate ballistic and cruise missile defense in the littoral
- Accelerate network centric operations linking sensors and weapons
- Plan less manpower-intensive forces
- Build small-signature ships capable of providing sustained long-range firepower
- Design ship production to allow rapid incorporation of the latest technology

Applying these principles and future visions of the military, the Panel questioned some of the services' procurement programs. For the surface navy, the Panel disagreed with the decision to terminate the Arsenal Ship.

They believed that this platform was an important test bed to support new major naval weapon systems and concepts. [Ref. 87, p. 49]

F. TRENDS IN DEFENSE REVIEWS

The major Defense reviews of the post-Cold War era sought to match strategy, force structure, and projected budget resources. Each review was criticized for being driven by budgets rather threats.

From fiscal years 1991 through 1998, the reviews established the DPG and enabled a 29 percent drawdown of active duty personnel, 35 percent since the peak in 1987 [Ref. 11, Table 7-5]. Figure 5.1 illustrates the reduction in active duty personnel since 1990.

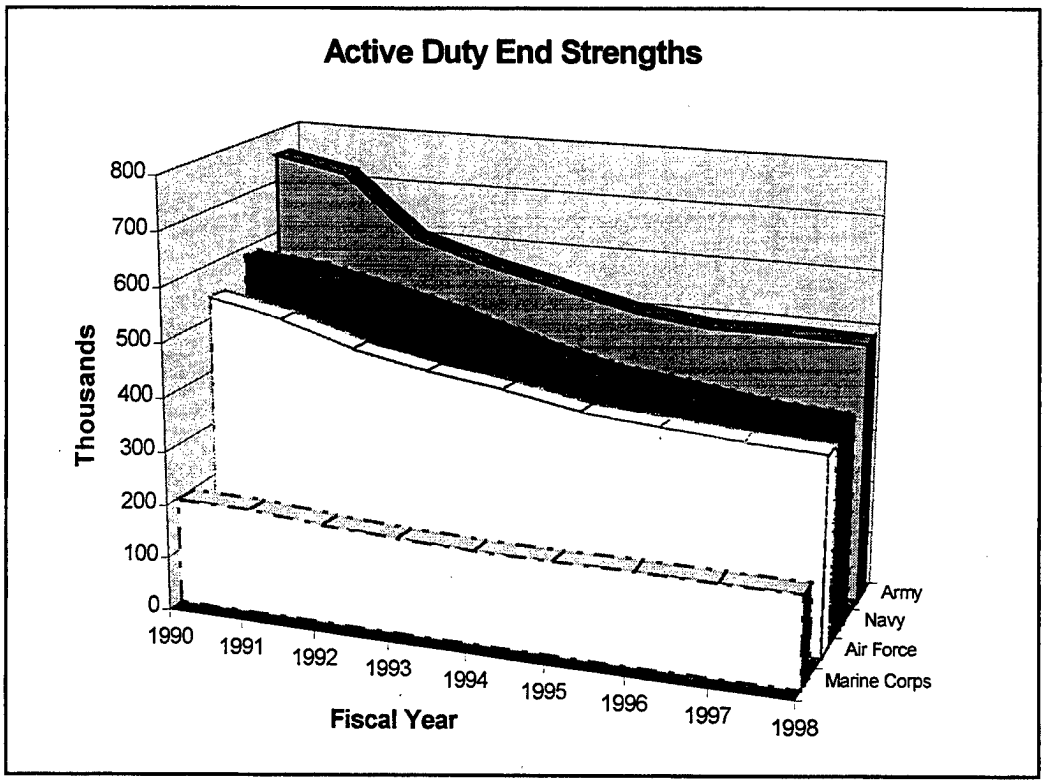


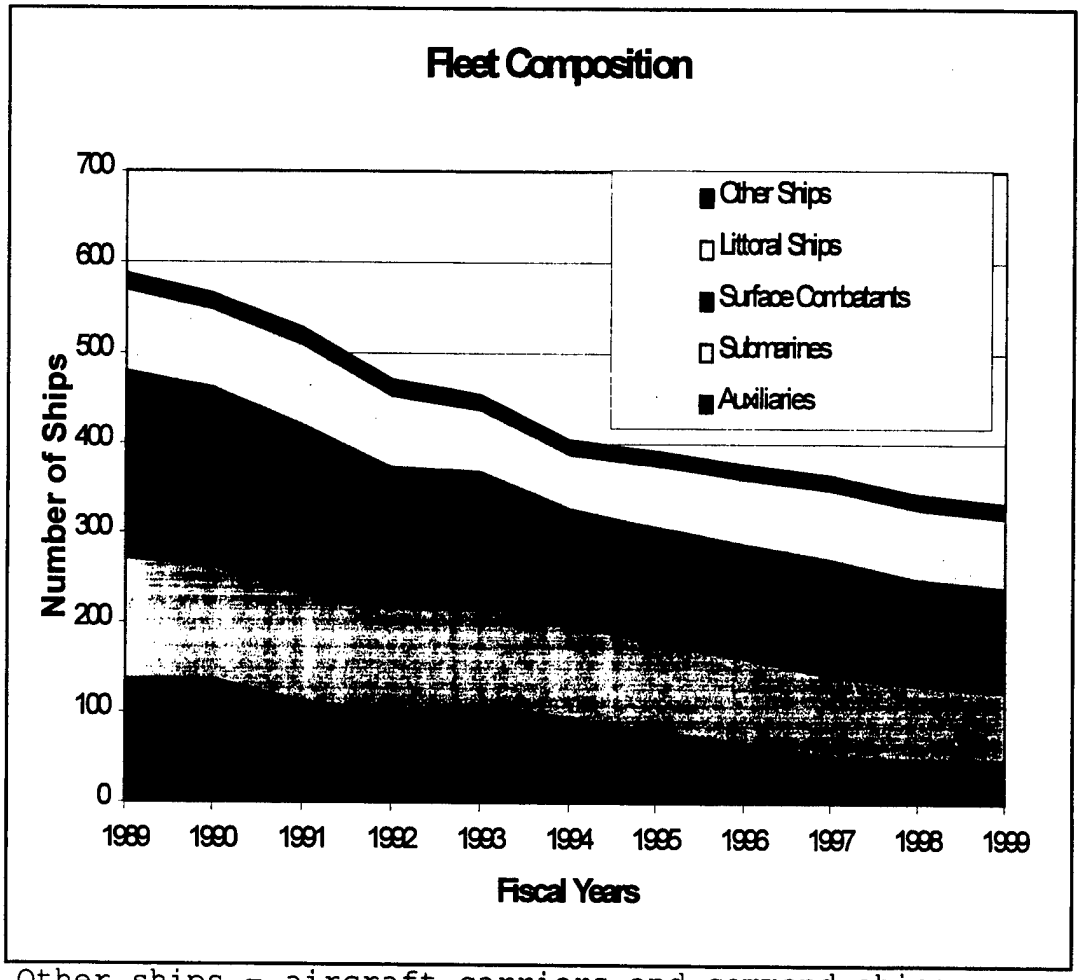
Figure 5.1: FY90-98 Active Duty End Strengths. Ref. 11.

G. BATTLE FORCE SHIPS

By 1998, the post-Cold War reviews, in conjunction with the other developments treated in this thesis, had gradually reduced the Navy to 331 ships, a 44 percent drop compared to 1989. The fleet is projected to drop to 321 in 1999 and possibly below 300 in following years. [Ref. 88] The Assistant Secretary of the Navy for Research, Development, and Acquisition commented that the fleet size emerging from the QDR was the "smallest it's been since 1921." [Ref. 89, p. 26]

In the 1990s, the fleet downsizing was accomplished by decommissioning a large number of old and middle-aged ships and building a smaller number of new ships. In order to maintain the QDR force, the shipbuilding rate must be increased from six to seven ships per year to eight to ten per year. As new construction is delayed, a shipbuilding "bow wave" is created in future years' procurement in order to replenish the fleet. [Ref. 90] Figure 5.2 illustrates the decline in fleet strength.

Due to the drawdown and shipbuilding priorities, the force structure has shifted slightly to littoral operations. Coastal patrol, amphibious and mine warfare ships have increased from 14.6 to 23.3 percent of the fleet. This increase was partly due to the littoral shipbuilding programs in the 1990s. Surface combatants and submarines maintained approximately the same percentage and Auxiliaries declined since 1989. [Ref. 88] Figure 5.3 illustrates the trend in fleet composition by percentage since 1989.



* Other ships - aircraft carriers and command ships.
** Littoral ships - Coastal Patrol, Amphibious, and Mine Warfare ships.

Figure 5.2: FY89-99 Fleet Composition (FY99 is projected). Ref. 88.

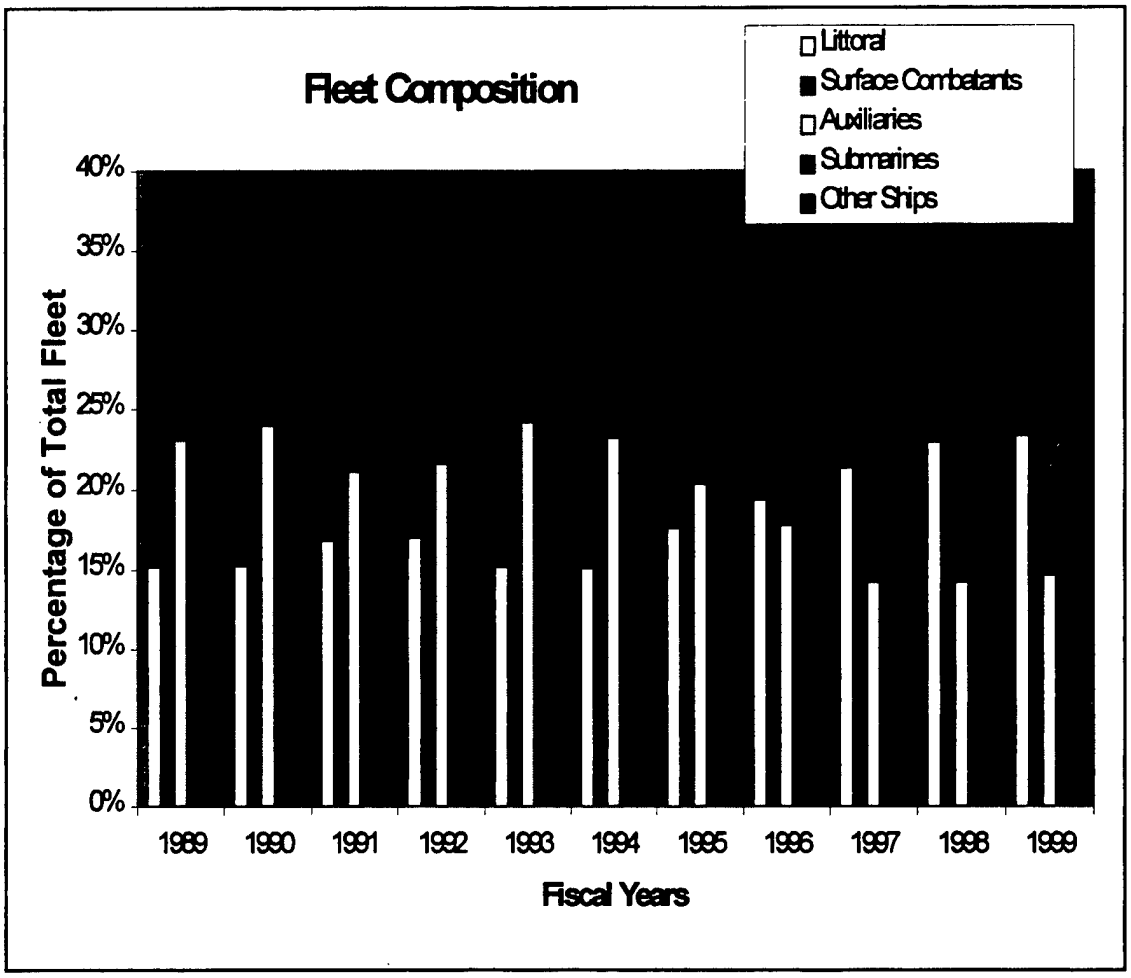


Figure 5.3: FY89-98 Fleet Composition by Percentage (FY99 is projected). Ref. 87.

H. SURFACE COMBATANTS

The Reagan Defense build-up of the early 1980s set a goal of 238 surface combatants. In 1987, surface combatants reached their peak of 220 ships [Ref. 88]. With the threat of global war diminished, surface combatants became prime targets for downsizing in the 1990s. The

Defense reviews shaped the surface combatant fleet, guided by force structure and manpower goals and force concepts.

1. Force Structure

The 1990 Base Force and 1993 BUR established a DPG calling for 150 and 128 surface combatants, respectively. Both reviews concentrated on aircraft carriers for planning purposes, from which surface combatant levels were derived.

The 1997 QDR specifically targeted surface combatants due to "newer and more capable" ships being added to the fleet. [Ref. 81, p. 29] DoD set a goal of 116 surface combatants to compensate for an increased number of multi-mission Aegis combatants. When surface combatant levels reach 116 in 1999, Aegis ships are projected to be 47 percent of the surface combatant fleet [Ref. 27].

The post-Cold War reviews progressively reduced the recommended number of surface combatants. To meet force level goals, the Navy decommissioned ships prior to the end of their service lives. Delaying new ship production also reduced surface combatant levels. Figure 5.4 illustrates surface combatant downsizing since fiscal year 1989.

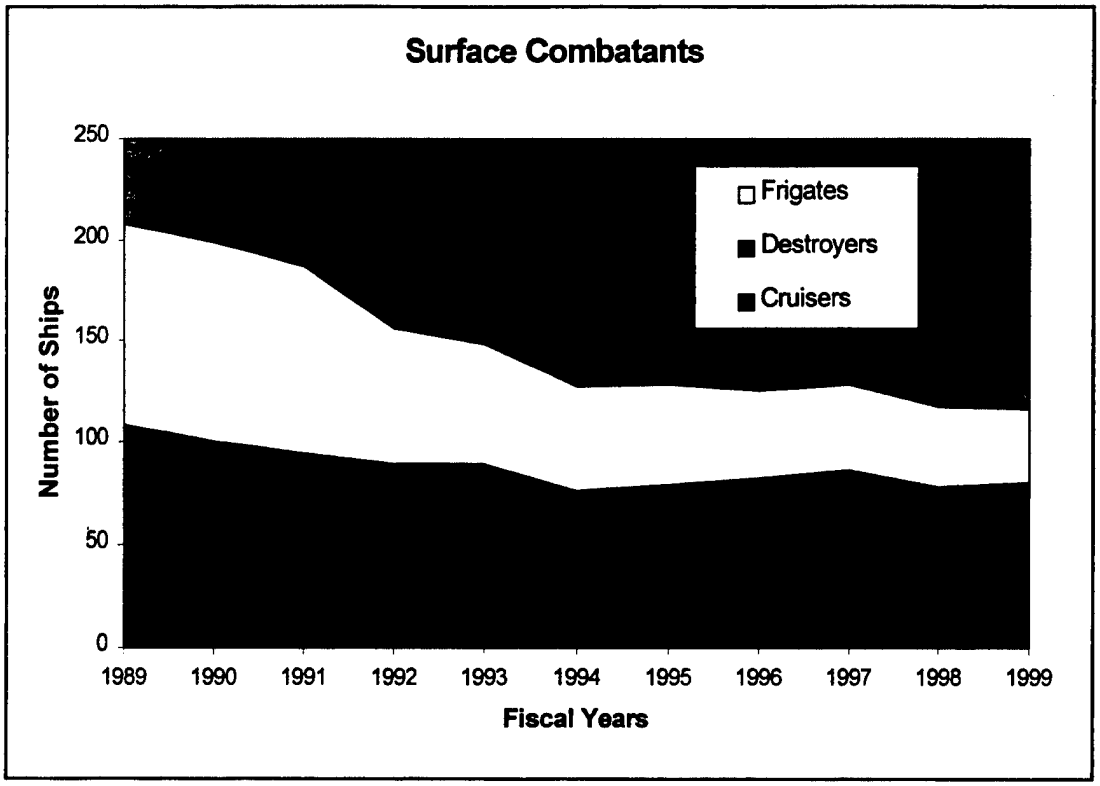


Figure 5.4: FY89-99 Surface Combatants (FY99 is projected). Ref. 88.

The levels established by these reviews conflicted with the 1995 *Surface Combatant Force Level Study,* sponsored by N86. The study cited the need for 165 surface combatants in a two MRC scenario. With maximum allied support projected at 30 warships, the study concluded that 135 U.S. surface combatants were required. To alleviate the risk of inadequate allied support, the study recommended 135 active duty combatants combined with 10 reserve frigates. [Ref. 91]

The force mix of the 145 ships was to be composed of 80 Aegis and 65 non-Aegis combatants. [Ref. 91] Due to the reduced procurement rate of Arleigh Burke-class destroyers, the Aegis fleet will not attain that level before 2005 [Ref. 92].

With the QDR establishing the 1998 DPG at 116 surface combatants, the Surface Warfare Division's recommendation of 145 was apparently rejected. The QDR did acknowledge the increasing percentage of multi-mission Aegis combatants and reduced the overall surface combatant levels.

2. Manpower

The types of surface combatants decommissioned were partly influenced by end strength goals established by the reviews. Steam and nuclear-powered ships were manpower intensive platforms. Their engineering plants and older weapon systems required more personnel to maintain and operate them.

In 1990, the Navy had 95 steam and nuclear-powered surface combatants. By 1998, the surface combatant fleet had almost 24,000 fewer billets due to the decommissioning of all steam and nuclear surface combatants. [Ref. 27]

Table 5.6 compares manpower requirements of the older steam and nuclear platforms against gas turbine platforms.

Table 5.6: Surface Combatant Manpower Requirements. Ref. 27.

Surface Combatants	Officers and Crew
Nuclear	
Long Beach-class cruiser	958
Truxton-class cruiser	561
Bainbridge-class cruiser	558
Virginia-cruiser	624
California-class cruiser	603
Steam	
Belknap-class cruiser	479
Leahy-class cruiser	423
Coontz-class destroyer	402
Charles F. Adams-class destroyer	360
Knox-class frigate	288
Gas Turbine	
Ticonderoga-class cruiser	358
Spruance-class destroyer	339
Arleigh Burke-class destroyer	346
Kidd-class destroyer	339
Oliver Hazard Perry-class frigate	206

3. Force Concepts

The Defense reviews changed strategic planning from global war to major regional conflicts. To contribute to MRCs, the role for surface combatants was shifted from war at sea to littoral operations.

The National Defense Panel advocated future force capabilities to ensure security in the next century. The

Navy has been pursuing these capabilities with the Navy Theater Missile Defense system, increased and more precise power projection, and the DD-21 ship program.

With the unexpected North Korean launch of a three-stage rocket in September 1998, homeland defense and the proliferation of ballistic missiles have become national priorities [Ref. 93]. In the fiscal year 1999 budget, Congress appropriated an extra $1 billion for the Ballistic Missile Defense Organization (BMDO) to accelerate development of ballistic missile defense systems. In an October 21, 1998 letter, a bipartisan group of Senators urged Secretary of Defense Cohen to spend a large portion of the extra $1 billion on the Navy Theater Missile Defense system. The Senators cited the Navy program's "level of success" and "possibility for near-term protection" as justification. [Ref. 94, p. 1]

Two cruisers are scheduled to field an area ballistic missile defense system by September 1999 for testing and/or national emergencies [Ref. 95, p.38]. With increased funding, Navy theater wide defense could be deployed by 2005, according to the Navy's Theater Air Defense Branch. DoD asserted that Navy theater wide defense is an important

element for National Missile Defense, a program designed to protect the territorial U.S. [Ref. 96, p. 1].

I. SUMMARY

The collapse of the Soviet threat and budgetary pressures were catalysts for change to the U.S. military strategy and force structure. DoD coordinated that change by conducting comprehensive reviews of the military. These reviews were the 1990 Base Force, the 1993 BUR, and the 1997 QDR. Collectively, these reviews reduced DoD end strength by 29 percent. For the Navy, the reviews cut 44 percent of the fleet.

As part of the fleet, surface combatants were also reduced. The reviews directed surface combatant reductions in part by setting overall Navy manpower goals and force levels and by advancing new concepts in naval warfare. To meet the DPG established by the Defense reviews, the surface combatant fleet was reduced by 104 ships and over 24,000 billets. The Navy also shifted its focus to littoral operations to support the MRC strategy.

The services have experienced funding difficulties in meeting the force objectives established by the latest Defense review, the QDR. This was reflected in critiques

of the 1998 and 1999 FYDPs. GAO argued that these budgets have substantial risk in implementation. The GAO considered the procurement goals as unrealistic and O&M as underfunded. By September 1998, the service chiefs apparently agreed, testifying to the Senate Armed Services Committee that Defense funding was insufficient and readiness was at risk.

Future shortages in O&M and procurement funding may alter surface combatant shipbuilding programs. Under the multi-year contract, the Arleigh Burke-class destroyer procurement rate should not change. However, since DD-21 procurement is scheduled to begin in 2004, this surface combatant program may be altered due to other competing shipbuilding programs and the lack of procurement funding.

Homeland defense and Navy theater wide missile defense have become more important, and, accordingly, have received increased funding. With the fiscal year 1999 addition of $1 billion for the BMDO, the Navy may experience an accelerated development of ballistic missile defense and, in turn, expanded roles for certain surface combatants.

VI. CONCLUSION

A. SUMMARY

This thesis identified and examined the most important factors that influenced planning for the U.S. surface combatant fleet since the end of the Cold War. It also addressed the following subsidiary questions.

- What trends are perceived in surface combatant force levels since the end of the Cold War?
- How have the major deficit reduction agreements of the 1990s affected Defense, and, in turn, surface combatants?
- How was the surface combatant force restructured in DoD's "Base Force" (1990), "Bottom-Up Review" (1993) and the "Quadrennial Defense Review" (1997)?
- How did the OPNAV staff reorganization and the new assessment process in 1993 modify programming for surface combatants?
- How has littoral warfare changed surface combatant planning?

To interpret the changes to surface combatant planning, this summary divides the conclusions into factors

that shaped the present force and factors that will influence the future force.

1. Major Factors 1990 to 1998

Two major factors, the end of the Cold War and tight limits on discretionary spending, have shaped surface combatant planning from 1990 to 1998. These two catalysts transformed surface combatant doctrine and force structure.

a. End of the Cold War

By the end of 1989, the Eastern European nations had left the Soviet Bloc and renounced their ties to Moscow. In December 1991, President Gorbechev resigned as Soviet President and the Commonwealth of Independent States was created in the former Soviet Union. These two events eliminated the United States' Cold War adversary. The threat of global war and the justification for the Reagan Defense build-up were removed. In response, the U.S. shifted from preparing for global war to preparing for major regional conflicts.[2]

[2] The 1998 Defense Posture Statement and National Military Strategy have changed this term to Major Theater Wars.

b. Discretionary Spending Limits

With reform in Eastern Europe and spiraling federal deficits and debt, deficit reduction took precedence in the post-Cold War era. In 1990, the government changed its budgetary strategy from the deficit targets of Gramm-Rudman-Hollings to limiting spending. Spending limits were enforced as caps on discretionary spending and pay-as-you-go (PAYGO) for entitlement programs. The BEA's discretionary spending limits achieved the majority of their deficit reductions by reducing Defense spending. From 1990 to 1998, Defense TOA dropped from $363.4 to $262.0 billion (FY99 dollars), losing 28 percent of its spending authority [Ref. 11].

2. Effects on Surface Combatants

These two catalysts, the shift in Defense strategy and reduction in fiscal resources, altered the structure of the U.S. military. DoD attempted to develop new strategies and reduce resources in three Defense wide reviews, the Base Force, BUR, and QDR. These reviews downsized end strength and force structure to meet budgetary goals and new strategic planning objectives.

Since 1989, the Navy's share of the DoD downsizing was a 35 percent drop in active duty end strength and a 44 percent reduction in the fleet. Navy TOA declined 33.5 percent from 1990 to 1998 [Ref. 11]. O&M and procurement plummeted and the Cold War fleet was no longer affordable.

For surface combatants, this new regionally focused strategy and the restricted resources provided to achieve it progressively reduced requirements from 238 in 1988 to 116 in 1998. In addition, surface combatants with large manpower requirements were targeted for elimination in order to meet DPG end strength goals. Figure 6.1 illustrates the trend between Navy procurement and O&M and surface combatants since 1986.

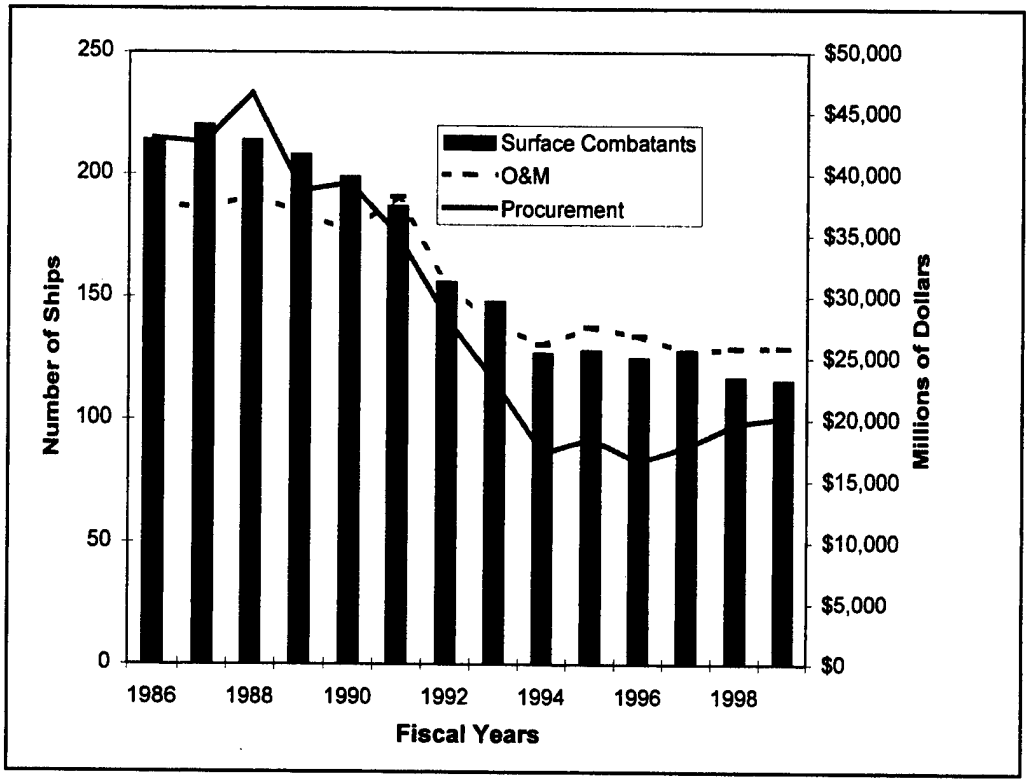


Figure 6.1: FY86-99 Surface Combatant Force Levels, Navy O&M and Procurement TOA (FY99 Dollars). Ref. 11 and 88.

To manage the transformation of strategy and the new fiscal environment in the DoN, CNO Admiral Kelso provided a new vision for naval warfare and restructured the Navy's planning process. The new naval vision was published in "...From the Sea," detailing the use of naval forces for joint littoral warfare. The new white paper dictated that naval doctrine, organization, and weapon capabilities were to be designed to influence events ashore in support of joint operations.

To realize these new naval concepts, Admiral Kelso reorganized the OPNAV Staff and program planning process. The reorganization reduced competition between the warfare communities and increased participation by the CINCs and Marine Corps. The change in program planning to joint mission and support area assessments incorporated new standards and criteria for determining program priorities in the new joint strategic environment. With the implementation of the new OPNAV and program planning, Admiral Kelso was able to lead the Navy to the new direction of joint littoral warfare.

With a new OPNAV Staff and program planning process, the surface combatant fleet was transformed from expensive Cold War battlegroups to more affordable joint littoral forces. This restructuring of the fleet in the post-Cold War strategic and fiscal environment was accomplished by new weapons development and revolutionary ship concepts.

The smaller and less expensive surface combatant fleet emerging from this transformation is focused on the littoral. The Cold War inspired Aegis combatants are being upgraded to dominate the littoral battlespace and to increase power projection ashore in support of joint ground operations. The next surface combatant program, DD-21, is

specifically designed to operate in the littoral and provide enhanced land attack capabilities.

The Navy force structure has become more economical by reducing operating and procurement costs for surface combatants. All the manpower intensive steam and nuclear surface combatants have been decommissioned. For the present shipbuilding program, the Navy entered into a four year multi-year contract for 14 Arleigh Burke-class destroyers, projected to save $1.4 billion [Ref. 36]. The Ticonderoga-class cruisers will commence a weapons system upgrade in 2001, extending their useful life and delaying a new cruiser program until 2015 [Ref. 34, p. 26]. For the new surface combatant program, the design of DD-21 is focused on reduced life cycle costs through automation, improved maintenance technologies, and optimizing manning functions. With its operations, maintenance, and upgrades projected to cost a third as much as a conventional destroyer, DD-21 will be a significantly reduced burden on the Navy's limited resources.

3. Major Factors for the Future

From 1990 to 1998, surface combatant planning was shaped by the strategic shift after the Cold War and limits

on discretionary spending. For the future, the tight fiscal environment and the new interest in regional and homeland security will shape the surface combatant force.

a. Future Budgets

Starting in fiscal year 2000, the "firewalls" separating Defense and non-Defense spending will be eliminated as per the Balanced Budget Agreement of 1997. The only limit will be on total discretionary (and violent crime) spending for the fiscal year 2000 budget. The fiscal years 2001 and 2002 budgets will have a single cap on overall discretionary spending. With these budgetary changes, Defense will have to compete for limited funds against domestic programs. The old debate of "guns vs. butter" will resume. [Ref. 97, p.28]

For Defense, fueling this debate will be the FYDP. At the end of the debate over the fiscal year 1999 budget, the service chiefs requested an extra $17 billion a year for Defense to address readiness deficiencies [Ref. 85]. The service chiefs asserted that the relatively flat Defense budgets of the 1998 FYDP are inadequate to meet the magnitude of Defense requirements, ranging from peace keeping operations to weapons recaptilization.

Within a confined Defense budget of $250 billion, the 1998 FYDP depended on nearly flat O&M funding and increased infrastructure savings to boost the procurement accounts to $60 billion by 2001 [Ref. 11]. Historically, O&M funding grew as procurement increased and procurement rose and fell with overall Defense budgets [Ref. 84]. To add to the financial risks of the 1998 FYDP, Congress has been unwilling to support further base realignments and closures to promote infrastructure savings, despite the QDR and National Defense Panel recommendations.

For fiscal year 2000, the Defense budget will have some stiff competition for additional funding. A federal budget surplus is projected, but numerous initiatives are competing for funding. For example, Democratic initiatives have been proposed for the surplus to improve education. Republican initiatives have been directed towards tax cuts. Both parties want to shore up Social Security before the baby boom generation begins to retire in 2008. [Ref. 97, p. 28] In the end, domestic initiatives and the lack of discretionary "firewalls" may make increased spending for DoD's 2000 FYDP difficult to accomplish.

For surface combatants, the fiscal year 2000 FYDP will be crucial. Seven different shipbuilding programs are scheduled during the 2000 FYDP. In fiscal year 2004, seven ships are to be purchased, including the first DD-21 [Ref. 98]. With the new IWAR assessment process and its requirement for 100 percent TOA coverage, it may be difficult for the Surface Warfare Division to complete the 32 DD-21s by 2015 within a constrained procurement TOA.

b. Regional and Homeland Security

With weapons of mass destruction proliferating, theater missile defense has become a priority for regional stability and homeland defense [Ref. 87]. Southwest Asia and the Middle East are regions susceptible to instability due to ballistic missile proliferation. Fearing North Korea and China, Japan, Taiwan, and South Korea have expressed interest in a joint effort with the U.S. for building a theater missile defense system [Ref. 99]. Israel and the U.S. are already in the process of purchasing a third Arrow theater missile defense system to protect Israel from any potential Iranian, Iraqi or Syrian ballistic missile attacks [Ref. 94, p. 1]. Due to the increasing number of countries with ballistic missile

capabilities, theater missile defense has become an instrument for regional stability.

Closer to home, the Chinese are judged to have at least 13 nuclear-armed ballistic missiles aimed at U.S. cities [Ref. 93]. North Korea's September 1998 launch of a three stage rocket confirmed their ability to reach Hawaii or Alaska with ballistic missiles. Due to ballistic missile proliferation, the National Defense Panel asserted that homeland defense will become a priority within the next 20 years [Ref. 87].

The threats of ballistic missiles against regional stability and U.S. territory provide an opportunity for surface combatants to expand their strategic role. With the extra funding provided to the BMDO in fiscal year 1999, the Navy believes that it can have a theater wide system operational by as early as 2005 with a portion of those funds [Ref. 96]. Aegis combatants could be deployed to provide regional stability and homeland defense against ballistic missiles.

Insuring regional stability and homeland defense would be a tremendous transformation for Aegis combatants. With the role of ballistic missile defense, the Aegis "shield" would be transformed from protection of naval

battlegroups in the Cold War to defending cities in the "new world order".

B. RECOMMENDATIONS FOR FUTURE RESEARCH

This thesis identified and explained the major factors that have influenced the Navy's surface combatant fleet in the post-Cold War era. Further research should be done on the major factors that influenced the Army during this transitional period. The Army experienced an even greater downsizing and doctrine change after the Cold War. The Army's shift in planning from ground war in Europe to major regional conflicts would be a useful focus. A similar study could be done on the Air Force's transition.

Of additional interest would be an in depth analysis of the new Navy programming process started in June 1998. Unsuccessful with the JMA/SA assessments, the IWAR appraisal process is expected to emphasis capabilities rather than platforms for programming recommendations. Analyzing all the factors that influence PPBS, a study could examine IWAR's capabilities approach for assessments.

Finally, the 1998 FYDP relies on infrastructure and budgetary assumptions to support an increase to $60 billion in procurement funding by 2001. Further research should be

conducted on the appropriateness of this funding level and Defense recapitilization requirements.

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